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PROGRESS IN AMERICAN BESSEMER WORKS.

It is a well-known fact that all the Bessemer works which are in operation in this country at the present time are quite full of orders for rails, some of them reaching over many months yet to come. In a general way it is also known that the current production of a pair of converters, in one of our Bessemer works, is very large—much larger than is obtained from those of the same nominal capacity in other parts of the world.

Just how large this product really is, may be usefully shown by a brief comparison of the weight of ingots obtained in 1871 and in 1878, from a pair of converters of the same nominal capacity. This is given in the table which shows the production of Works No. 1, for a strictly characteristic week late in 1871, and also that of Works No. 2, for a recent average week in 1878, or nearly 7 years later.

WORKS.	Year.	Number of heats per week.	Ingots per heat, tons.	Ingots per week, tons.
No. 1	1871.	80	4·83	386
No. 2	1878.	290	6·33	1,838
Ratio of advance		3·62	1·31	4·76

Works No. 2 were built some years later than No. 1, but upon the same general plan, and with substantially the same machinery. It will be the more apparent that this enormous advance is due to the skill and efficiency of the management, rather than to any important changes of the machinery, when it is stated that Works No. 1 within the last two years have given No. 2 an exceedingly close rub in the weight of ingots produced by them.

Hardly any comment that can be made will add to the force of this comparison.

THE METALLURGICAL REVIEW.

The conductors of this magazine inform their subscribers by circular that, with the end of its second volume, completed with the August number, it will be consolidated with the *Iron Age*. Since both periodicals belong to the same parties, we take this announcement to mean simply that the *Metallurgical Review* is to stop, while the *Iron Age* is to go on. It was in like manner that the man who owned a cow and a calf, consolidated the calf into the cow by killing it.

We are sorry for the failure of the *Review*. In appearance and contents (despite some defects in the accuracy of its editing and proof-reading) it was creditable to American technical literature; and we supposed, until lately, that it was meeting with the success it deserved. Even now, we must frankly say, we do not think it should have been abandoned as a hopeless enterprise, at the end of a single year. The publisher announced with the first number that its continuance was "not dependent upon the profit of the undertaking;" and naturally enough we are now both surprised and pained to find that its discontinuance *is* dependent upon the loss of the undertaking.

Mr. WILLIAMS says in his circular that the *Review* "has felt in a peculiar degree the effects of industrial and commercial depression at home and abroad," that the losses have exceeded expectation, and that in view of the discouraging outlook for the metallurgical industries of this country and Europe, he does not feel justified in continuing it on its present basis. We think he is too easily frightened, or else was too sanguine at the outset. The establishment of a journal of any kind involves sinking some capital at first. If every promising commencement were to be judged at the end of a single year, there would be no such thing as success, particularly in technical journalism. The managers of the *Iron Age* have seen fit, sometimes, to taunt the ENGINEERING AND MINING JOURNAL with the fact that for years after its establishment it failed to pay expenses. But it happened that the "continuance" of this journal did "not depend upon the profits of the undertaking;" and having won at last an assured position, we are qualified to give from experience to all aspirants the sound advice, that the way to establish a journal successfully is to persevere. Abandonment because of losses simply makes those losses absolute and irrecoverable.

It is not likely that the *Metallurgical Review* will ever be revived. The publisher has tested his nerve, and finds it unequal to the strain. We have been called upon many times during the last twelve years to note the decease, more or less untimely, of mining and metallurgical periodicals in this country. The field is one into which many are ready to rush, but which yields no harvests to hasty or careless tillage. Usually it is by puffs of stock companies and advertisers, selections from foreign journals, and such original scientific contributions as can be obtained without cost, that sheets of this sort expect to live. It is no wonder they fail—generally without doing what Mr. WILLIAMS has done, namely, to continue manfully to the end of at least one year, and offer to subscribers in cash the balances still due them. Mr. WILLIAMS goes down with his flag flying; but in the presence of so small a leakage, this heroism seems unnecessary. Why go down at all? Why not pump and paddle awhile longer?

The *Metallurgical Review* was quite free from the causes of failure we have named. It assumed a high and impartial tone, favored no one, feared no one, and was as free from advertisements as the *Iron Age* is full of them. If the publisher had only fought it out on that line, the profession would have felt grateful to him. But there is little use in grieving. Our handsome chocolate-colored companion is dead (and buried in the *Iron Age*); and the ENGINEERING AND MINING JOURNAL is left to mourn. We must bear our lonesome lot as best we can. *

WATER-GAS—VIEWS OF EMINENT CHEMISTS REGARDING IT

Few mooted questions of the day rank higher in practical importance than those connected with the pending introduction into domestic, metallurgical, and other uses of so-called water-gas. Few movements in advance, however, have ever been met with more strenuous and desperate hostility than this—such opposition proceeding from the large moneyed monopolies concerned in the mining of gas-coal and the manufacturing of gas therefrom with the existing plant. This existing plant has cost large sums of money, and there is, moreover, another large interest involved—that concerned in the building of gas-works on the prevailing system, and the manufacture of apparatus therefor. These several interests, interlinked as they are, have become imbued with the idea—incorrect, as we believe—that the new systems coming into rapid use are fraught with necessary danger to their investments. Hence these tears; and hence the terrible outcry against water-gas as a vehicle of deadly poison, and so forth. Hence, also, the recent voluminous, not to say inflated articles on the water-gas and carbonic-oxide question which have appeared in the *Gas-Light Journal*.

Among the documents we have from time to time placed in our columns, is the recent report of Dr. HENRY WURTZ on the Municipal Water-Gas Works in New York. This report, it would appear, has been laid by by the Municipal Company before two of the most eminent European scientists, Dr. FRANKLAND, of London, the first of British gas-chemists, and Dr. ADOLPHE WÜRTZ, of Paris, one of the six chemists of the Institute of France, Professor in the *Ecole de Medicine*, editor of WÜRTZ'S great *Dictionnaire de Chimie*, etc.

Both these high authorities, whose opinions we quote below, pronounce, without hesitation, in favor of the views taken—heretofore, it would appear, almost exclusively among chemists—by our American chemist, WURTZ, in this controversy. Several of the phantoms that have been raised by the champions of the gas-monopolies are here forever sent to rest. It appears that there is even no foundation for the assertion of a

prohibition of water-gas by law in France—a sample of "gas" which has done much duty of late in this discussion.

ROYAL COLLEGE OF CHEMISTRY, SOUTH KENSINGTON MUSEUM,
LONDON, May 16, 1878.

SIR: In compliance with your request, I have read the reports of Dr. HENRY WURTZ, dated January 1st, 1878, and March 4th, 1878, on the composition and properties of the gas of the Municipal Gas-Light Company, of New York, and also the articles published by Professor HENRY MORTON, in the *American Gas-Light Journal* of March 2d and 16th, 1878, and, having been called upon to express my opinion as to the adaptability of this gas for lighting and heating purposes, I have no hesitation in saying that it may be used with safety, both in public buildings and private houses. I should be delighted to substitute this pure and powerful illuminating agent for the gas with which my house in London is at present supplied, although it is used in all the bedrooms.

(Signed) E. FRANKLAND.

CHARLES G. FRANCKLYN, Esq., President of the Muncipal Gas-Light Company of New York.

[TRANSLATION.]

PARIS, June 12, 1878.

SIR: I have read with attention and interest the documents concerning the gas of the Muncipal Gas-Light Company of New York, which you have forwarded to me.

I have acquainted myself with the extensive and exact work which Dr. HENRY WURTZ has published about the composition and use of the gas. Produced by the decomposition of steam on incandescent carbon, and saturated with very volatile hydrocarbons, obtained from petroleum, the gas possesses an intense illuminating power, a marked smell, a sufficient density. I have been struck with the correctness of the remarks which terminate the report of Dr. H. WURTZ, and which, in my opinion, answer the objections formulated by Dr. HENRY MORTON, inserted in two articles in the *American Gas-Light Journal*, published in New York. No doubt the danger of poisoning exists with all gases containing carbonic oxide, and coal-gas is not exempt from the latter, as it can contain as much as 12 per cent of its volume. But I think that the danger, which could only have sad consequences in exceptional cases, and through a sort of fatality, has been exaggerated and should not be taken into account, considering that gas is used without hesitation for lighting our houses, notwithstanding the very real danger of explosion and fire, no matter what kind of gas and whatever its composition.

Further, the use of water-gas has never been prohibited in France, and if the numerous processes which have been indicated for its production have been abandoned, or have received only a restricted application, the cause is principally due to the circumstance that the technical and economical conditions of the production have, up to the present, been very unfavorable.

In manufacturing, under good conditions, a gas remarkable on account of its illuminating power, and of a sufficient smell to reveal its presence, you have realized an important progress. It would appear to me unjust to deprive you of your useful discovery. (Signed) ADOLPHE WUERTZ,

Member of the Institute, Professor at the School of Medicine and the School of Sciences.

To CHARLES G. FRANCKLYN, Esq., President of the Municipal Gas-Light Company of New York.

NEW PUBLICATIONS.

REPORT UPON GEOGRAPHICAL AND GEOLOGICAL SURVEYS, *West of the One Hundredth Meridian, in charge of First Lieut. George M. Wheeler, Corps of Engineers, U.S.A., etc.* VOL. III., *Astronomy and Barometic Hypsometry.* Washington, 1878.

The reports of WHEELER'S earlier work (down to 1873 and 1874) are nearly all published. That they contain much material of great value to science, no one will be disposed to deny who has examined them. The papers by GILBERT, MARVINE, HOWELL, STEVENSON, and LOEW, contained in the third volume (Geology), which was issued, we believe, in '75 or '76, were interesting and able, though in many respects tantalizing and incomplete. The fifth volume (Zoology), which appeared at about the same time, presented a brilliant array of contributors, including the names of YARROW, COUES, HENSHAW, COPE, CRESSON, NORTON, MEAD, EDWARDS, STRETCH, OSTENSACKEN, ULKE, UHLER, THOMAS, HAZEN, and VERRILL, among which American zoologists will recognize more than one, of a more than national reputation. The fourth volume (Paleontology), issued last year, was the work of Messrs. WHITE and COPE, and must carry with it a high degree of authority in consequence. We are not quite certain as to Vols. I. (Geography), VI. (Botany), and VII. (Archæology); but we think neither of them has yet been published.

The second volume, containing the astronomy and barometric hypsometry of the survey, has recently made its appearance. It is divided, according to its title, into two parts. Part I. is made up of reports by Dr. F. KAMPF, JOHN H. CLARK, WM. W. MARYATT, and Prof. T. H. SAFFORD, on the astronomical determinations at main stations in Nevada, Utah, Montana, Wyoming, Nebraska, Colorado, and New Mexico, occupied in the years 1872, 1873, and 1874. These reports present, of course, chiefly tables of observations and computations, involved in the determination of the astronomical coördinates of the several stations. Sketches of the localities are also given, showing the position of the observing blocks or astronomical monuments; so that if these should hereafter be removed or destroyed, the points they mark may be recovered. Dr. KAMPF contributes an article on the Determination of Personal Equations, with a plate and description of an ingenious apparatus, invented by himself for that purpose. Part II. gives the results in barometric hypsometry, obtained in 1871–5, inclusive, chiefly by Lieut. HOXIE, but, after him, by Lieut. MARSHALL, who makes the report. A number of officers and other assistants are also credited with work in observation and reduction. Lieut. MARSHALL'S introduction contains some valuable remarks concerning the instruments employed, particularly the aneroid barometers, the nature and extent of the defects of which are discussed. He gives also an account of the methods of work practiced, and a brief exposition of some of the barometric phenomena exhibited in our continental interior. We do not wish to be hypercritical; but the text of this volume should have been edited more thoroughly. Science is not incompatible with correctness of English style and punctuation; on the contrary, precision in these matters is intimately connected with precision in thinking. When we are told (p. 527) that "it is considered best to give the results with only such corrections as are evidently erroneous," we infer that the writer means one thing and says another. The paragraphs following this passage, though they present less ludicrous errors in language, are nevertheless careless and obscure in style. To take a single other instance: the great fluctuation in diurnal temperature is said (pp. 527, 528) to be due partly "to the non-freeing of latent heat in the upper strata by the formation of clouds, and during the colder parts of the night by the deposition of dew, which rarely, if ever, forms." Here the little introductory *non* is evidently intended to operate through the rest of the sentence, which it unfortunately declines to do; the use of *and* for *or* increases the trouble; and finally the deposition (or non-deposition) of dew is made responsible for the non-freeing of latent heat in the *upper* strata. We hear a good deal about the course of study at West Point; and we notice that a solemn Board of Visitors gives profound annual consideration to the subject, and makes a report, which is quietly pigeon-holed (as it usually deserves to be) by the War Department. For our part, we think the greatest difficiency in all our technical schools is in the department of the English language. Every editor knows how few of his contributors can write for the press correctly and accurately. In scientific or technical articles, this evil becomes doubly annoying; for defects in expression upon such subjects can not be freely corrected. We do not wish to stigmatize West Pointers as sinners above others in this respect; but we must say that this is the one weak point in most of their published work, and that in some cases, which present exceptions to the rule, we have found upon inquiry that the exceptional clearness and grace of style was derived from a culture outside of the *curriculum* of the Academy.

The moral of which is, that if our mathematicians, astronomers, geographers, explorers, observers, and engineers do not possess the necessary knowledge of expression, they ought to employ "literary fellers" to put their work in shape. There are two considerations which take the question out of the realm of taste. The first is one of expense. Obscure and unskillful writers are always diffuse; and very large sums could be saved to the government and to private publishers by the condensation which could be effected in their work without the sacrifice of a single shade of thought. The second consideration is still more important. Scientific works are addressed to a more than national public. Foreigners consult, quote, study, and translate them; and the looseness or error in expression which a native overlooks, or mentally corrects with a smile, becomes an insoluble riddle to a foreigner.

But we return from our digression, merely adding that we have made of the volume before us not a target, but a text. There is very little "reading matter" in it; and it does not deserve to be singled out as specially bad. But faulty it is, in the respects we have named; and the only injustice of which we have been guilty lies in letting so many other books go by, without the criticism which they equally demanded, but which we have now emptied all at once upon the latest offender.

The table of altitudes given by Lieut. MARSHALL comprises 664 points, the altitudes of which have been determined from simultaneous cistern-barometer observations at two or more stations. This is but a small portion of the work accomplished by the survey in this department. The total number of computed barometric altitudes exceeds 11,000, of which, perhaps, 2000 have been determined by the cistern-barometer, and the remainder from aneroid observations. Future publications will make available these important data. The present table contains the altitudes of important peaks and other well-known localities. We note the following as the points given in Colorado exceeding 13,000 feet in height.

Altar Peak, 13,254; Antoro Peak, 13,497; Argentine Pass, 13,286; Canby Peak, 13,356; Del Norte Peak, 13,084; Dunn's Peak, 13,502; Engineer Peak, 13,076; Evans Mountain, 14,321; Glacier Peak, 14,243; Gray's Peak (North) 14,380; (South) 14,411; Half-Moon Creek Peak, (South of) 13,552; Handie's Peak, 14,149; Divide between Henson and Cebolla Creeks, 13,003; Hunchback Peak (Oso), 13,755; Hunt's Peak, 14,055; Mount Harvard, 14,152; Hurricane Peak, 13,565; La Plata Peak, 13,316; Mount Lincoln, 14,375; Macomb's Peak, 13,154; McClellan's Peak, 13,842; Mears Peak, 13,008; Meigs Peak, 13,393; Mesquite Pass, 13,308; Pass Peak, 13,092; Red Cloud Peak, 14,093; Red Mountain, 13,333; Rosalie Peak, 14,236; Simpson's, 14,056; Spanish Peak (West), 13,718; Stewart's Peak, 14,032; Trinchera Peak, 13,681; Uncompahgre Peak, 14,408; Yellow Peak, 13,618.

Long's Peak, Pike's Peak, Mount Yale, and some others of the highest summits in Colorado, are omitted. Mount Whitney, or Fisherman's Peak, in the California Sierra, is set down as 14,448 feet high—the most elevated point named in the table.

DICTIONNAIRE *des Arts et Manufactures et de l'Agriculture.* Paris, 60 Rue Madame. 1878.

A fourth edition of this work, revised and augmented, is now announced. M. CHARLES LABOULAYE, the editor-in-chief (author of a

treatise on Kinematics), is assisted by a large corps of specialists, among whom we notice such names as those of HERVÉ-MANGON in agriculture, BERTHELOT in chemistry, EBELMEN in thermodynamics, etc. M. DEBETTE appears to have charge of mining and metallurgical topics. The work forms four large octavo volumes, illustrated with 5000 wood-engravings. The price in Paris is 100 francs, which is certainly cheap for such a work.

THE LEAD CONUNDRUMS.

Special Correspondence of the Engineering and Mining Journal.

Referring to my article "Lead Phantom," and the comments thereon, by the commercial editor of the JOURNAL in No. 4, vol. 26, I consider several points of said comments well taken, and but little at variance with my own views and expressions. The main difference between us is that you try to make the possible future the present fact, while I admit my preference for conserving the present.

The very rapidity of the development of our mineral resources, the financial *status* of which is in so many respects on the verge of bankruptcy, where it is not already in the abyss, should make us touch these interests with a very tender hand. Fully sharing with the JOURNAL an unlimited faith in the ultimate international success of our mining and manufacturing interests, I must still protest against leading the colt into a race when its condition is all but crippled; its golden head and silver neck show signs of great fatigue and indiscriminate use of the bridle; its leaden body is cumbersome and can hardly cross the plains; its irons are badly worn, and out of fix, and the forges on the route are to a great extent abandoned. Its worst ailing is the lead colic; it has got too much of it, but how to get it out? There is too much for an emetic. The cure must be hygiene, and slow but regular motion will prove the best remedy. The whole industry of the country must have faith in the efficiency of this motion. It is our business and duty to get it on the move.

At the present the lead question is the most prominent one just because it is the open question: *What is the bottom price of lead?*

It must be the limit at which it can be produced, with living wages for the miner, and sure, if moderate, interest on the working capital. Have we reached this limit? Yes and No. Yes for the present, No for the future. But, in order to enable the industry to reach the limit of the future, the manufacturing interests of this line must believe that the present lowest possible limit has been reached, and in order to make them believe it, it must be proven. Who, then, are the prominent producers, respectively, shippers of lead of the present? Nevada, Californir, Utah, Colorado, and the Mississippi Valley States. In what condition are they now? Granting the two first States named a slight increase up to one fourth of the total production, the Utah correspondence quoted in the JOURNAL reports a rapid falling off, auguring, at least, a decrease of from 6000 to 8000 tons for 1878 on that of 1877. This loss will hardly be covered by this year's production at Colorado, Leadville included.

The new mining field of Southeastern Kansas, opened last year with great success and still greater promise, has sunk into relative insignificance. Missouri, which produced last year nearly one third of the total output of this country, is sore from head to foot. Its best miners gone, and every other miner whom one strikes in Leadville hails from Joplin and other mines of that region. They did not leave Missouri, seduced by silver reports, but because lead got below the bottom price, zinc mining remaining the sole comfort of those left behind. The great companies in Southeast Missouri, with their expensive establishments, necessitated by the character of their mines, strain every nerve to keep above water, and have reduced the wages to rates as Mr. Keith indicates in his new process, but which will secure no permanency of experienced and reliable hands. The Northern mines are dead dull, and will hardly wake up to enjoy the publication of their geological formation on an empty stomach. The present weekly production in the Mississippi Valley is one half what it used to be.

This is the state of affairs as I see it. So any body can improve upon it, and welcome to him! These statements are not intended for an appeal to purchasers to pay a penny more for lead, but for assisting you in presenting all sides of the question to the proper answer, "*that the limit of the present has been reached.*"

In many mining districts the stagnation is far less due to the actually low price of lead than to the constant threatening of a sudden swamping of the market by the far West production. This fear may be put aside. The far West mines need positively the most nursing to make them future breeders of pig-lead to the extent which their resources undoubtedly promise. But these lead resources are generally situated so far up the mountains, in every sense of the word, that in matters of fact we had better stay down a while to reckon with the present; for not until millions shall have been expended in the improvement of the means of transportation, the erection of suitable concentrating works, in the experimenting with and the establishment of numerous smelting and reduction works; not until the majority of mining organizations shall have learned to make the mines profitable by underground work, instead of overground maneuvers; not until then will the base metals of the far West cut that figure in the market that *the limit of the future can be considered.*

The falling off in the production of most districts in Utah—last year the largest producers—proves that said production was not an almost entirely incidental "product of silver." The check-mate on the progress of the mining industry of the two largest producers, Utah and Missouri, shows that we have *arrived at the present limit.*

Another conundrum is the question: "*Can the price of lead continue so low as it has been?*" It can not! For the production is evidently decreasing, gradually, but surely, and will not turn the other way unless there is an inducement for recommencement of operations; the opening of new mines and the reopening of abandoned works. Leadville can not and will not make up the leakage of export and decrease of production.

It is difficult to foresee events in the mining season now before us—the best season in the mountains; but I dare predict a decrease of at least 10,000 tons in the total production of this country in 1878 from that of 1877, unless the market rallies considerably; and by the time that the European market may offer inducements for shipping across the Atlantic, we shall have nothing to export, as our home market will then, by a sudden rise, prevent such shipments as promptly as the European market has hitherto met the chances for export from here by a quick decline there, in anticipation of the probability of such shipments.

Let us have patience and facts.

B.

ON WALLS TO RESIST THE PRESSURE OF WATER.*

By M. Pelletreau.

Two hypotheses are adopted, which, without being strictly correct, serve as a starting-point, so that the results obtained may be comparable with previous investigations in which these hypotheses are accepted. 1. A wall subjected to the pressure of water resists merely by its weight, without any strain of flexion. 2. A force acting obliquely on a section of the wall produces the same crushing strain which the resultant normal to the face would produce. Three conditions have to be satisfied: Resistance of the wall to crushing under its own weight; resistance to crushing under the pressure of the water; and, lastly, resistance to sliding. The section of the wall, moreover, must be made as small as is consistent with the fulfillment of these conditions within the limits of safety. Walls resting upon a solid foundation, and walls resting upon a soft foundation, or a foundation exposed to scour, have to be considered separately; and walls may be classed under three heads: 1. Top of wall level with the surface of the upper water. 2. Top considerably below the ordinary level of the upper water. 3. Top above the upper water level.

The author commences with the investigation of the conditions of resistance of a wall resting on a solid foundation and where the top is level with the surface of the upper water. He divides the wall into four zones for different heights, and investigates, by elaborate analytical methods, the profiles suitable for each, and gives graphic representations of some of the results obtained—the valley across which the wall is placed being supposed indefinitely large.

Comparing the section of a dam erected near Ajaccio, with the section it should have, according to the formulæ given in the article, it appears that, while the section as built amounts to 203 square yards, the theoretical section, taking the actual top width of 19 feet 8 inches, would be 161 square yards; whereas. reducing the top width to 6½ feet, which would be quite sufficient, being the actual top width of the dam at the sides, the required sectional area would be reduced to 128 square yards.

The alterations that may be made in the profile of a dam, when the valley is narrow and the reaction of the sides affords support to the wall, are next fully discussed.

When the top of a dam is level with the surface of the upper water, its theoretical width at the top is zero; but with high dams a moderate width at the top does not materially modify the theoretical profile. When, however, for the purpose of obtaining a roadway, the wall is raised considerably, and its width also notably increased, changes occur in the theoretical profile which form the subject of a special investigation. The profiles of dams whose summits are liable to be submerged are next considered. Such instances are found in dams across steep narrow valleys, inclosing torrential rivers with a considerable fall below the dam, and where, accordingly, the dam may have to sustain the pressure of a considerable flood above, without much counteracting support of a rise of water in the part of the river below. This last investigation terminates the branch of the subject relating to walls on solid foundations; the case of walls resting on soft or unstable foundations being reserved for a future article.

L. V. H.

SCIENCE HASH.

The news kitchens and cooks of the various metropolitan newspapers are responsible for much of the "science" of the day. The cooks, with scissors, paste-pot, and quill, dish out for the hungry, inquiring mind various conglomerations which they palm off on the gullible public under the inviting names, "Scientific Gossip," "Our Science Column," "Popular Science," etc.

Who the scientific person is, nobody other than the newspaper proprietor knows, and evidently he is ashamed to tell. Here is a sample dish, exhibited by the New York *Times:*

"In a lecture recently delivered by Dr. SIEMENS on the utilization of heat and other natural forces, some very suggestive facts were stated. He showed, among other things, how heat can be made to do a greater amount of work than ever by means of electricity. One hundred horse-power of steam or water may be used, for instance, at a central or convenient place to drive dynamo-electric machines. The current there produced could, *by pipes*, be conducted to halls or factories, and then converted into light or mechanical power."

Hold, Dr. SIEMENS! Don't kill the fellow with a brutal pistol. Either do it scientifically; say by some of the electricity sent through "*pipes*" to annihilate him as by a stroke of lightning, or turn him over to us to exhibit in his true light.

What does he mean, any way? Is heat to be made to do a greater amount of work than can be done by electricity; or is electricity going to make heat do a greater amount of work than ever? Poor Heat! Great is electricity! Or, no! Electricity is made Light of, and Heat does more work.

Shades of FRANKLIN and FARADAY, come and see electricity in "*pipes*" running into halls and factories! Perhaps, though, it is run in in barrels. hogsheads, and *pipes*, and is kept on tap, so that every man can have as much as he can pay for, in place of "Jersey Lightning."

Explain yourself, Mr. Scientific Person, or cease making science hash that needs combing out before swallowing. You're the man who makes the phonograph an electrical contrivance, and the telephone a tin box with a string.

K.

*Abstract of a paper in the *Annales des Ponts et Chaussées*, 5th series, vol. xii., p. 356, 1 pl.; vol. xiv., p. 258, and p. 480, 3 pl. From the Proceedings of the Institution of Civil Engineers of London, edited by James Forrest, Secretary.

TUNNEL TIMBERING AND ARCHING.*

(*Continued from page* 79.)

Shortly after the completion of the Gumpoldskirch Tunnel, a number of others were built on the Prague-Brünn (1843–49) and on the Prague-Dresden lines (1845–50), and in these the system used at Gumpoldskirch was adopted and applied in improved form. Experience at the latter tunnel and at the Triebitz Tunnel had taught the lesson that the collars and "spars" or slanting legs were too long. Not only was too great a pressure found to be exerted on every single timber, but also a greater space was found to be excavated above the haunches of the arch than was necessary. It was also found to be extremely difficult to get these long legs into place in quicksand or in ground exerting much pressure. The upper timbering was therefore divided into five parts or "blocks," as shown in Fig. 1, and it will be seen that these top timbers were braced by the props *b d e*. The stretchers *a a a* served to support scaffoldings and the tracks for the cars. To hold the lagging in place at the side-walls, legs or rather vertical bars *g* were placed, braced by stretchers *h*. The work passed through the following stages :

1. The heading in which the collars were placed.
2. Stoping down this top heading to form a high heading so to speak, extending in part from top to bottom of tunnel, in which the long center props were set.
3. Widening out the top for the remaining spar-timbers down to springing line.
4. Lower excavation for side-walls.
5. Excavation of foundations.
6. Building the side-walls and arch.
7. Turning the invert where required.

One noticeable fact about the Austrian system of timbering is, that the length of the sections advanced is subject to no arbitrary rule, nor governed by any particular considerations of convenience or economy ; the length of section advanced at a time therefore is readily adapted to the nature of the ground. In tolerably firm ground, long sections may be taken out at a time, and in very soft, treacherous material the sections may readily be reduced to 5 feet at a time. When much pressure is experienced longitudinally, rakers *m* (Fig. 2) may be introduced. In the construction of the Semmering and of the Karst railroads, both firm and extraordinarily difficult ground was met with, and the application of the system in all sorts of material had a pretty fair test. In some places, the pressure was so great that no timbering seemed able at first to stand it, and cases occurred where the collars were actually forced down in all a total distance of 11 feet, and all regularity of shape or system in the timbering was lost ; the timbers were also forced in both from the sides and the front as well as at top. This pressure, in fact, was so great that the five top timbers or blocks supporting the roof, which ordinarily were put together at an angle of about 150° with each other, were in some of the joints twisted to angles of 50°. Further, the sills between the upper and lower set of middle legs or props were sometimes pushed as much as from two to three feet to the right or left of center line, bringing the upper and lower props so much out of position as to form an obtuse angle with each other, and this motion was often also complicated by the sills being shoved backward or forward on the line of the tunnel some feet out of plumb, so that in this direction also the upper and lower props formed an angle with each other. This enormous pressure, in all cases of loosened ground in tunneling, became intensified by the yielding of the timber, so that finally even iron-hooped timbers of 2 and 3 feet diameter could not withstand it.

These disadvantages showed that well as the system seemed to have been developed, it was by no means perfect, and it was, in fact, abandoned at the time by many of the Austrian engineers. Others remained true to it, and endeavored to remedy the defects. One party claimed that the fault lay in the very longitudinal bracing itself, because, if one or two sets were by any means displaced, the longitudinal connection between the bents transmitted this displacement on, and this led to various innovations.

One party took up the center-core system again, and, further, others substituted top longitudinal bar-timbering for the cross-collars and spars of the Austrian system, still keeping, however, the double set of upper and lower center-props with the middle sill between.

(TO BE CONTINUED.)

* Condensed from *A Treatise on Tunneling, Explosive Compounds, and Rock Drills.* By Henry S. Drinker, Mining and Civil Engineer. Published by John Wiley & Sons, New York. (Copy-righted.)

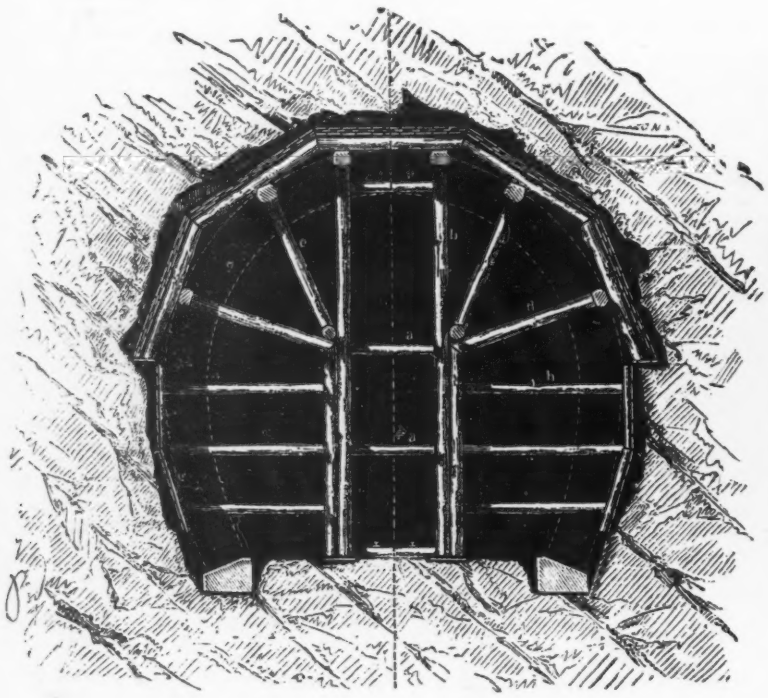


FIG. 1.—THE BODENBACH AND MÜHLHAUS TUNNELS.

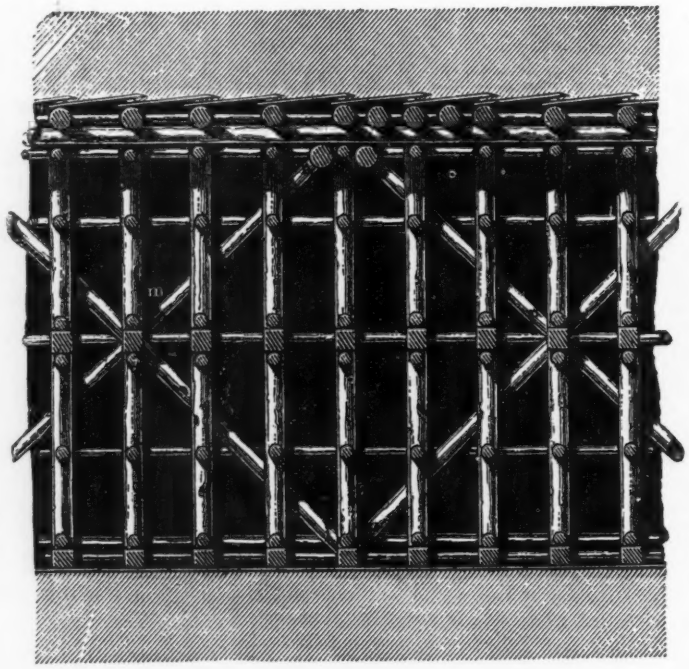


FIG. 2.—RAKERS USED IN THE AUSTRIAN SYSTEM.

(Longtitudinal Section.)

THE DARIEN SHIP-CANAL.

The latest advices report the formal ratification of a contract between the Government of the United States of Colombia and the International Committee for the construction of a ship-canal across the Darien Isthmus.

The most important conditions specified in this concession are, that the projected canal shall be completely neutral and open to the commerce of the world, and that it shall be completed before the year 1895. The company has acquired likewise the concession of the free use of all building materials on the Isthmus, the grant of a strip of land 200 yards wide on both sides of the line of the canal, and the right to select at will 1,000,000 acres in addition to the foregoing grant. The leaders of this latest movement are understood to be Frenchmen, and the contract above referred to appears to be the outgrowth of the results of a recent exploring expedition, under the leadership of Lieutenant WYSE, of the French navy.

Upon the question of cost and the engineering features of the project, we have thus far met with no information, the published references to the expedition merely stating that a favorable line had been located from the point of Gandi (or Acante), on the Atlantic, along the valleys of Tupisa and Tiati to the river Tuyra, close to where it discharges into the Gulf of San Miguel, on the Pacific.

The line proposed is about twice as long as that from the Gulf of San Blas (on the Atlantic) to the mouth of the Bayano (on the Pacific), a distance of about 35 miles. For this last-named route, which is one of the shortest possible ones, Mr. TRAUTWINE has estimated the cost of a canal of 100 feet width of bottom, 200 feet width at water-line, and 30 feet depth, at about $300,000,000. Unless, therefore, the route favored by the International Company possesses peculiar advantages, which, although possible, appears to be scarcely probable, since the ground has been several times gone over by American exploring parties, the cost will, in all probability, exceed Mr. TRAUTWINE'S figures for the much shorter San Blas route. It must, however, be borne in mind that the last-named route involves a tunnel 10 miles in length, which represents not less than $175,000,000, or over half of its estimated cost. We shall await the appearance of a statement of the engineering features of the proposed new line with much interest. Nevertheless, despite our profound admiration for the splendid achievement of DE LESSEPS, we believe his countrymen will, if ever brought face to face with the undertaking, think twice before seriously attacking a problem that is immensely more difficult to solve than was that of Suez.

The engineering and climatic difficulties in the way of the construction of a canal across the American Isthmus are so enormous, and introduce so many elements of uncertainty as to possible cost, that it appears scarcely conceivable that the work should ever be undertaken by private enterprise, since even with the most sanguine estimates of its com-

mercial utility fully realized, it is scarcely credible that it could ever be made to give its undertakers any return for the enormous expenditures which its construction and maintenance will involve. This view of the case is supported by the history of the Suez Canal, which, though immensely beneficial to the commerce of the world, has given at best a very meager return to its first investors, and this, let it be remembered, cost only $100,000,000, or about a third of the sum that careful engineers, who speak from actual knowledge of the ground, and actual experience of the magnitude of the work to be accomplished, estimate to be necessary for the piercing of the American isthmus. The American canal must be built, if at all, by the great commercial nations of the world as a work of international importance and utility.—*Polytechnic Review.*

THE LEAD REGION OF WISCONSIN.*

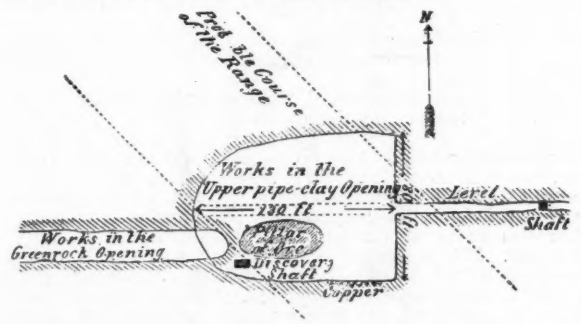
(*Continued from page* 77.)

Beetown District.—This is the most westerly district in which any productive mines have been worked. In former years they were very productive, but have gradually become less so. There are several sub-districts, of which the principal ones are Beetown, Nip-and-Tuck, Muscalunge, and Hacketts.

The following parties are now, or have recently been, mining near Beetown:

Brown Bros. & Birch.—They produce lead ore, which is found in flat openings 4½ feet high and 4½ feet wide, and has been traced by a level 300 feet west from the discovery shaft. The depth at the working shaft is 60 feet; the greatest depth on the ridge will be 160 feet. Work was commenced in the winter of 1875–76, since which time the product has been 35,000 pounds. The prospects are considered good.

Wilcox Diggings.—This ground has been recently bought by Messrs. HENRY, ROSS, GUNDRY & TOAY, of Mineral Point, by whom it is now operated under the name of the Beetown mine. A level has been run in the ground 500 feet, underlying a flat sheet of blende and Smithsonite, which is in places 36 inches thick. The sheet has been found to extend 80 feet north and south, and 130 feet east and west; its extreme limits are not yet known. On its south side some copper ore has been found. The ground has produced lead ore to the value of $3500; also 45 tons of Smithsonite, and 175 tons of blende. Four men are now employed here, and it is intended to work the mine to its full extent. The engraving below shows the position of the present workings.



Pigeon Diggings are owned by Messrs. BARBER, DEWEY & COX, and employ about 50 men. The annual product of these diggings is about 250,000 pounds of lead ore.

During the last year a sheet of Smithsonite was discovered on the S. E. qr. of Sec. 19, which has produced 60 tons.

Hacketts Diggings have been idle for several years. Work has been resumed on them by Messrs. HUTCHCROFT & PIGG and WHITEHEAD & CO. The annual product is about 30,000 pounds.

Nip-and-Tuck Diggings, owned by Messrs. SELLICK & CO. and ROBERTS & CO. The annual product is about 20,000 pounds.

Muscalunge Diggings.—More activity is displayed here in mining operations than anywhere in the district, about half of the ore smelted in the Beetown furnace being obtained here. The following parties are operating in this vicinity: Graham Mining Company—its average annual production for the last nine years is estimated at 300,000 pounds of lead ore; Messrs. JAMES THOMAS & CO.—the average product is 150,000 pounds of lead ore per annum.

The average production of lead ore of other parties working in this district is as follows: Messrs. JAMES THOMAS & CO., 150,000 pounds; HUTCHCROFT & THOMAS, 150,000 pounds; HUTCHINSON, DEWEY & CO., 30,000 pounds; Atkinson Diggings, 150,000 pounds; SHOWALTER & PAYTEN, 70,000 pounds; RITTER & BOCK, 20,000 pounds; LOOMIS & CO., 12,000 pounds.

The lead ore in the Muscalunge mines occurs in direct contact with the wall-rock, usually in vertical sheets, and without any of the associate vein minerals which are usually found in the other mining districts.

(TO BE CONTINUED.)

THE FRYER PROCESS REDIVIVUS.—The *Mining and Scientific Press* of the 27th ultimo says: "Letters patent were received last week for improvements on the much-abused Fryer process, by which it is claimed the process will be made a success after all. The company which took hold of the works at Grass Valley have been persistently but quietly experimenting and working for a long time, and the improvements suggested by experience have been patented. Affidavits filed for the benefit of the examiners at Washington go to show that very favorable results have been accomplished.

"Mr. Charles E. Sherman, Superintendent of the Fryer-Noble Metal and Mining Co., has been indefatigable in testing and experimenting with the machinery devised by Mr. Fryer, and in due time will probably show the public what can be done with the improvements recently patented. We shall be pleased to rejoice with the mining public whenever the company definitely establish the successful working of this process."

* Condensed from *Geology and Topography of the Lead Region*, by MOSES STRONG, in *Geology of Wisconsin, Survey* 1873–77, Vol. II. Published under the direction of the Chief Geologist 1877 Mr T C. CHAMBERLIN.

SOLID STEEL CASTINGS.

A great barrier to the introduction of steel for constructive purposes has been found in the difficulty met with in counteracting a tendency toward defective homogeneousness in the so-called "low" steels. On account of their great strength and ductility, these steels would be eminently fitted for many engineering uses if it were possible to devise other means of correcting their defects than by forging and hammering, while an inestimable advantage as regards facility of giving it at once its working shape would be gained if steel without blow-holes and malleable could be poured into molds. "Mild" or "low" steel, containing a small amount of carbon only, is not as liable as the hard steels to the destructive action of internal strains, but its homogeneousness is commonly defective on account of the presence of blow-holes. A steel will generally flow better while casting the more it is carbonized; and it is probable that the greater fluidity of hard steel permits a freer escape of the gases, which there are good reasons to believe cause blow-holes. In the decarburization of pig-iron by the modern processes of making steel, the carbonic oxide formed by the reaction of carbon upon oxide of iron remains in solution in the metal, escaping partially only during the cooling period, when the solubility rapidly diminishes. The presence of the imprisoned bubbles of carbonic oxide affects the mechanical properties of the metal, and calls for some means of removing or preventing it. Rolling, forging, or hammering, though rendering the metal more compact, are expensive processes. Great pressure upon the metal while in a molten state was successfully introduced by WHITWORTH, who uses the hydraulic press, while others have recommended steam. NESSEL and other metallurgists starting from another point, sought to gain their object by aiding the expansive force of the gases by causing the formation of a vacuum above the fluid metal. These methods, by which the object in view is attained by mechanical means, though experimentally successful in the production of a solid ingot, did not open to the metal that wide range of application which lines of experiments based upon chemical inquiry showed to be possible. While the former sought a remedy, the latter, attacking the root of the evil, succeeded in detecting a preventive. Hard steel castings without blow-holes have for some time been produced, chiefly by KRUPP and some Sheffield firms, but it is only recently that soft steel, fit for industrial and structural purposes has been cast without the defects which the material is so liable to suffer from. By a long series of experiments, ably conducted and persistently renewed, the history of which is given by Mr. A. L. HOLLEY in the May number of the *Metallurgical Review*, the engineers of the Terre-Noire Company have gradually developed the manufacture of a malleable metal which, after annealing, has the physical qualities of forged steel. Its average tensile strength in a cast annealed state is as follows: Hard steel, 47·51 tons per square inch and 8·1 per cent elongation; medium steel, 46·92 tons per square inch and 14·6 per cent elongation; soft steel, 31·72 tons per square inch and 25·3 per cent elongation.

The process consists of the formation of an initial bath of manganiferous pig, to prevent oxidation during the process. Then such softening or decarburizing materials as wrought-iron are dissolved in the bath, and toward the end of the operation, which is determined by a series of slag and metal tests, silicon and manganese are added in the shape of special pig, in such order and proportion as to prevent the formation of blow-holes while casting, and at the same time to give to the steel certain special physical qualities. The material used for the initial bath varies according to the grade of steel to be produced; thus a hard steel requires 11 to 14 per cent of manganiferous pig, holding from 6 to 8 per cent of manganese, while soft steel is made from an initial bath containing as much as 14 per cent of manganese. Oxidation during the whole process must be kept as low as possible, and all means must be employed to prevent cooling the bath. The decarburizing or refining materials must, therefore, be pre-heated. They are chosen with reference to the product arrived at, and may be Bessemer or open-hearth scrap, fountains from previous castings, puddled bars or direct blooms, the proportion varying from about 78 per cent for hard steel to about 72 per cent for soft metal. The final addition, too, is different, according to the product; for hard steel it usually consists of 11 per cent of special pig, containing 3·5 manganese, 3·0 carbon, 4·2 to 4·1 silicon, and 0·1 phosphorus; for soft steel from 3½ to 4 per cent of the entire charge of a pig holding 1·6 carbon, 14 per cent manganese, 75 per cent silicon, and 0·12 phosphorus. The chemical reactions to which the favorable action of the special pig upon the quality of the metal is due are as follows: The silicon prevents blow-holes by decomposing the carbonic oxide; the manganese reduces the oxide of iron and prevents a further production of gases by the reaction of this oxide on the carbon; the silica formed produces silicate of iron, which is rendered more fusible by the formation of a double silicate of iron and manganese. The steel contains notable amounts of manganese and silicon, which, as they undoubtedly impart special qualities to the metal, must be closely maintained. The following are the averages of 6 and 12 charges:

1.	0·945 Mn.	0·560 C.	0·340 Si.
2.	0·880 Mn.	0·500 C.	0·390 Si.

It is, therefore, indispensable, in order to know the chemical composition of the bath, to keep oxidation under control during the whole operation. Only by this means can the exact amount of the special pig to be added be ascertained. The metal produced by the Terre-Noire process may be cast into any desired shape and requires only slow annealing. It is, therefore, eminently fitted for armor plates, guns, projectiles, heavy parts of machinery, rolling-mill machinery, etc. The novelty of the process consists in the employment of definite proportions of manganese and silicon at regulated times during the operation. Its extraordinary qualities and the low price at which it will be possible to produce it insure for the steel made by the Terre-Noire process a rapidly increasing sphere of usefulness.—*Iron.*

MINERAL DEVELOPMENTS IN MARYLAND.—The Hagerstown (Md.) *News* says: "There is quite a heat of excitement existing among mining men here over the yield of copper which the Blue Ridge mountains are producing in different localities. Mr. D. B. Russell, who has been prospecting for copper on his farm for several years, has unearthed specimens said to be very good. The force now at work at the base of the hill have discovered an abundant deposit of low-grade silver ore.

REMOVING PHOSPHORUS FROM IRON ORES.

Mr. J. E. Stead, in a paper read before the Cleveland Institution of Engineers, gives some instructive results of his experimental trial of the several modes that have been proposed for the removal of phosphoric acid from iron ores. He reports unfavorably of all of them; though the plan of Jacobi appears to have given fairly good results, and far more satisfactory than the others. The trials were made upon Cleveland iron-stone, and the following gives a brief *résumé* of his experience:

Jacobi's plan, which will be familiar to most of our readers, consists in subjecting the porous ore, in large tanks, to the action of sulphurous acid, generated by the roasting of pyrites; and condensing the excess of acid vapors in coke tower condensers. About 90 per cent of the phosphorus can be dissolved out of the ore by this operation. The excess of sulphurous acid is recovered by simply boiling, and the dissolved phosphate freed from the acid is precipitated, dried, and sold for fertilizing purposes, at a price which it is affirmed covers the cost of extracting it.

Mr. Stead's experimental trials of the Jacobi process with Cleveland ores, gave him the following results:

	Phosphoric acid in stone, per cent.	Phosphoric acid removed, per cent.	Phosphoric acid remaining, per cent.
Sample 1	1·73	1·64	0·09
" 2	1·80	1·71	0·09
" 3	1·34	1·16	0·18
" 4	1·14	0·97	0·17

Average amount removed = 90 per cent.

In these trials the ore was calcined and finely powdered, and treated with 30 times its weight of an aqueous solution of 10 per cent sulphurous acid for about 24 hours. Experiments with the ore in lump were made with the same solution, with the effect of removing but 15 per cent of the phosphoric acid, after three days' exposure; and a much stronger acid, and exposure of 10 days was required to remove 90 per cent. It would appear, therefore, from these results, that the practical success of Jacobi's process depends largely upon the physical character of the ores treated. Those which upon calcination are left exceedingly porous may be expected to yield the best results, since the chemical nature of the phosphatic impurity is the same in all cases. Mr. Stead's plan, it must, however, be observed, is a departure from that recommended and practiced by Jacobi, inasmuch as the former employed a solution of sulphurous acid, while the latter employs a continuous stream of gas, which is constantly washed out by a spray of water from above. The latter plan must certainly afford better results than that of Mr. Stead, as it not only insures perfect penetration of the acid reagent, but also constantly and successively brings fresh portions of the solvent in contact with all parts of the ore exposed to its action.

Mr. Stead then reports his trial of the plan suggested by Forbes, based upon the action of common salt when fused upon iron phosphate. The process is operated by saturating the porous ore with a strong solution of brine, evaporating the moisture by heat, and subjecting it to calcination. This treatment is stated to render the phosphoric acid soluble in water, so that the ore requires only to be washed to free it from the objectionable constituent.

The results obtained were quite unsatisfactory, as, even after fusion of powdered ore with salt for the space of an hour, a more thorough plan of estimating the efficacy of the reaction than the one described above, no phosphoric acid was rendered soluble.

Another plan, tested by Mr. Stead, was the carbonate of soda treatment, based on the well-known reaction resulting from the fusion together of the carbonate of soda with phosphate of lime, the result being the production of soluble phosphate of soda and insoluble carbonate of lime. It seems probable, in view of this chemical interchange, if sufficient carbonate of soda could be introduced into the lumps of ore by means of a saturated solution, that, by subsequent calcination, the above-named reaction must take place, with the effect of transforming a notable percentage of the phosphatic impurity into soluble form, when its removal by washing could be readily accomplished. This expectation was not realized with the Cleveland ore, since the quantity of the carbonate that could be introduced proved to be insufficient to remove more than a mere trace of phosphorus.—*Polytechnic Review.*

THE METALLURGY OF NICKEL.

By M. Badoureau, in Annales des Mines, Translated in Iron.

(*Continued from page* 78.)

Treatment the Wet Way.—The ores of New Caledonia present so many difficulties in treating them the dry way that M. Christofle was induced to experiment with several variations of the wet one. The ore is attacked by hydrochloric acid, and the nickel thrown down alone as an oxalate calcined in a crucible with charcoal cake. The process answers very well; but it has the drawback of consuming oxalic acid, which is a costly reagent. Another process has, therefore, been substituted, in which this reagent is not required. After attacking the ore, the iron and alumina are precipitated, and the nickel is thrown down as a protoxide or sesquioxide. The practical difficulty in this treatment arises from the sulphuric acid which is present in the commercial hydrochloric acid used. It has to be got rid of, or the nickel will be contaminated with sulphur. The nickel obtained by these different processes has a high degree of purity, as shown by the analysis made by M. Riche:

Ni	97·75
C	1·25
Si	0·54
Mn	0.36
	99·90

This metal crushes under the hammer without breaking up, showing that the harshness exhibited by nickel otherwise prepared has been due to its impurities. I should not be surprised if M. Christofle did not precipitate nickel directly in the metallic state by means of electricity.

After experimenting with the wet treatment, M. Christofle invented a mixed process in which the ore is freed, as far as possible, from the oxide of iron with which it is mixed by operations borrowed from the wet way, while the purified ore is reduced the dry way. M. Garnier asserts that nickel is never separated from iron by attacking the raw or roasted ore with acids: M. Christofle affirms the contrary. According to the latter authority, the solution of all difficulties lies in mixing the processes. A nickel is thus got sufficiently free from iron to be of practical use, while the cost of refining is kept low. An analysis of the metal made by M. Riche is:

Ni	98·00
Fe	1·60
Cu	0·50
Si	0·13
	100·23

Reduction of Nickel Silicate by Carbon.—M. Garnier has endeavored to make metallic nickel directly by reducing the ore in a furnace kept below melting heat. A cake is got which is pulverized, and the grains of nickel are separated by washing or by a magnet. The slag is too rich in nickel to be thrown away. M. Garnier seems, therefore, to have given up this process in favor of making cast-nickel as his first product.

Manufacture of Cast-Nickel.—M. Garnier pulverizes the ore, mixes it with fluxes and charcoal powder, sometimes adds oxide of manganese, cakes the whole together with tar, and either makes lumps the size of a nut, which he calcines in the crucible commonly used for steel-melting, or squeezes into bricks which he compresses, bakes, and piles in a blast-furnace. The slag, which in both cases contains particles of nickel, is pulverized, and the granules of metal are got out with a magnet and remelted in a crucible. In the cast-metal so obtained iron is always present, unless the ore itself contained none. When the ore contains 6 parts of nickel for 1 of iron, a cast-nickel can be got free from iron by the following method. The ore is treated in furnaces 4 meters high, into which cold air is blown at a low pressure. Energetic fluxes are added, such as fluorspath, manganese, or carbonate of soda, so as to have a fusible and not too ferruginous slag, it being necessary to avoid removing the carbon from the cast-nickel. No sulphur should be present in the fettling; it might remove the carbon as a sulphide. The crucible should be small enough to be heated to a very high temperature. By a careful observance of all these precautions, the silicate of nickel is reduced, while the silicate of iron is left unreduced, and we obtain a cast-nickel free from iron, tough, malleable, and capable of taking a polish.

Refining Cast-Nickel.—To remove carbon from nickel, ferriferous or not, either of the following plans may be adopted:

(1) We may refine by cementation, small bars of cast-metal being heated in a chest made of fire-brick in the midst of a mass of powdered oxide of iron.

(2) The cast-nickel may be submitted to puddling, like that used in the refining of iron; a bloom of nickel being got which is squeezed or shingled exactly like a bloom of iron.

(3) The carbon may be removed from cast-nickel melted on the sole of a reverberatory furnace by the oxidizing action of flame, a little niter being added if needed. With quartzose sand a slag is formed which carries off the impurities. The process is so far analogous to the Martin process, that it is advisable to add at the end a little manganesiferous cast-nickel. In the same way we add at the last, to the bath of melted nickel, either cast-nickel, or nickel obtained by cementation or puddling.

When the cast-nickel contains cobalt, the separation can only be made the wet way. If it is desired to take up the metal with oxide, it must first be decarburized. Operating by puddling, a sponge is got which is not carried to the hammer, and operating with an oxidizing melting, the nickel got is granulated. Even as a sponge, or in the form of grains, it is difficult to attack the metal. And if we must have recourse to the wet way, it is better to apply it directly to the ores.

Alloys of Iron and Nickel.—If we have to treat poor ores for which the preceding methods are inapplicable, they are mixed with rich iron-stone, so as to get on the whole 15 per cent of metal. M. Garnier states that iron carries down nickel just as lead carries down silver. The iron-stone can be profitably replaced by the oxides of manganese, cobalt, chrome, etc. Cast-metal is thus obtained of a complex composition, very fusible, easy to file or polish. A sample of one of these alloys was composed as follows:

Fe	58·0
Ni	35·1
Cr, Mn, Co	1·5
C	3·0
Si	2·4
	100·0

Nickeliferous pig-iron can be got by simply charging nickel ore into the blast-furnace. The compound pig of nickel and iron, treated like cast-nickel, gives an alloy of iron and nickel, the composition of which is in some sort similar to that of meteoric iron. According to M. Garnier, iron in alloy with a little nickel, becomes inoxidizable, hard, and tough, and as such is of a quality eminently fit for boiler plate, furnace tools, etc. This alloy can also be made by the addition of nickel in the Siemens-Martin furnace.

Copper and Nickel Alloys.—M. Garnier has an idea of making alloys of nickel with copper and several other metals, and to that end proposes the two following methods:

(1) The first process consists of preparing cast-nickel and refining it on the sole of a reverberatory furnace by the oxidizing action of the flame. Addition is made of the oxides of copper, zinc, and nickel, the oxygen of which combines with the carbon, silicon, and iron. By means of appropriate fluxes, such as manganese, fluorspath, borax, or rock-salt, the impurities are carried off in the cinder. At the end of the operation, the metals of which an alloy is desired are added to the nickel bath.

(TO BE CONTINUED.)

A New Narrow-Gauge Virginia R. R.—A new railroad project has been started, for the construction of a narrow-gauge line from Quantico, a village a few miles below Alexandria, Virginia, to Charlestown, West Virginia, and to Pittsburg. A company has been formed, with Hon. John Lynch, of Maine, for President. The Philadelphia *Press* says: "This road will bring the iron men of Pittsburg in direct communication with the immense deposits of iron ore in Virginia and West Virginia, while the main stem will traverse the anthracite, cannel, and bituminous fields of the Virginias, as well as the great timber regions, where almost every species of the most valuable growths abound in marvelous quantities."

GOLD MINING IN GEORGIA.

P. H. Mell, A.M., C. and M.E.

In an article written for the JOURNAL some time since on the Burnt Hickory mining region, I endeavored to define the limits of the gold belt extending through the State. It is my desire in this article to give in general terms the present condition of the mining interests throughout this belt. I have just completed a horse-back journey, extending from Alabama to Rabun County, Georgia, through the heart of this region, a distance of 200 miles. And the items I present in this communication were gleaned while on this trip.

A great deal of energy and enterprise have been exhibited, and much capital expended within the past thirty years in the endeavor to open good paying mines in Georgia. Some of these mines are now in successful operation, while a great many others have closed down from various causes. At some points I visited, where work had ceased for some years, I noticed the veins seemed to be well defined and the ore good, but the gold was locked up in the sulphurets to such an extent as to baffle the attempts of the miners to liberate it without resorting to very expensive machinery, and their limited means would not permit of such an outlay. One property particularly, located in Towns County, was abandoned on account of the presence of galena in the ore. Although there was much free gold present, yet the lead fouled the amalgamated plates to such a degree as to prevent the amalgamation of the gold. The parties did not understand the methods for profitably treating such ores, so they were forced to discontinue work. What we need, particularly in the mining regions of this State, is a class of miners who understand not only how to use a pick and shovel intelligently, but who are also familiar with the structures of veins and characters of ores, and who are well versed in the different methods of treating refractory and free ores: Such men are not to be found in this section of country, and, until the miners become so educated, mining here will be primitive and of the most crude style.

Since 1848–49, the mining region has greatly extended its boundaries. In the early days, Dahlonega was considered the geographical center, and a radius of forty or fifty miles, the gold-bearing country. To-day, however, this town occupies a position considerably removed from what is now recognized as the center. In the years above mentioned, Dahlonega was a flourishing and thriving village; and on account of the large number of new miners continually coming in and the numerous "claims" daily opened, a large business was springing up, and daily increasing, in furnishing supplies to the various mines. The United States mint located here gave a great impetus toward the prosperity of this town. The statistics from this mint show that, until the great California excitement, which carried off so many miners, the yield of gold was much over a million dollars annually. Georgia, at that time was considered to be the richest gold country in the United States; and even now she is able to occupy a prominent position before the world.

In 1848–9, for miles around Dahlonega every foot of ground was claimed, and wherever water was accessible, the long tom and sluice were put busily to work concentrating the auriferous sands. It is not possible to cross, even now, a single stream, no matter of how small pretensions, without becoming fully convinced of the diligent and persevering search that was made for the "precious stuff." For yards on either side of the stream the earth has been turned over and heaped up, and the rocks have been placed in such a manner as to show unmistakable evidence of close scrutiny for "particles." And some of the old miners, living in the county, point with pride to particular localities on some one of these water-courses where they made a "good find." After the exciting reports from California reached this country, gold mining commenced to decline. A large proportion of the miners left for the West. Some few, in the course of several years, returned broken down in spirits and all money gone; some died in the new country unknown and uncared for; while a very few succeeded in making a "speck." In conversing with these returned miners, they have but little to say about California, but their praises concerning Georgia's mines are many and continuous. This want of interest in California may be accounted for, in some respects, on the ground of their disappointment. But the statements concerning Georgia, though exaggerated in some instances, are, nevertheless, based on a good foundation. Our State Geologist informs us that Georgia is equally rich with California in minerals, for the reason that Georgia not only has the wealth within her hills, but the mining is more easily and cheaply conducted than in the West. And hence, it is possible to work profitably very low grade ores, that are now thrown on the dumps in the Western States as worthless.

Mining in Georgia thirty years ago was very crude and superficial. Vein-mining was comparatively unknown. The Little Giant, and like inventions, were then in the future, and the miner had to depend on his pick, shovel, and sluice-box. When the "slate" was reached, the claim was considered as exhausted. Such a thing as prospecting for veins was unheard of, and in a great many instances good quartz-leads were uncovered in the beds of streams, and passed over as slate and worthless. It is only within the past few years that any attention has been given to quartz mining, and this enterprise is due mainly to our Western and Northern friends.

Still, mining here is in its infancy; but with the developments already made, I am fully satisfied that the day is not far distant when the New York Mining Exchange will quote Georgia's stock at a high figure. There is speculation going on here to a small degree, but this is an evil that must necessarily creep into a mining region, and must always be expected. No harm, however, has as yet resulted, and it is to be hoped the element will be suppressed by the healthy system that has so far been inaugurated.

Since 1865, a period of 12 years, 340 stamps have been put to work in Georgia. As I have already stated, some of these mills have been silenced from various causes. But to-day there are actually at work over 175 stamps; all are more than paying expenses and some are producing a large interest on the invested capital. It is to be regretted that we have no system of monthly reports on the expenditures and receipts of the different mines, because in no other way can the annual production of gold throughout the State be accurately determined. The yield, I know, is large, but what proportion each mine produces is not reliably known.

In Carroll County, there are two mills, with five stamps each. One mill is in successful operation, and the other is to be opened at an early day by a company which is now conducting a series of tests on the property. The mill that is at work is situated in the western part of the county, and is owned by Mr. GEORGE BOWNER. This gentleman has obtained within a few years back more than one million dollars of gold from his mine. The mining and milling operations are under his own personal observations. He uses the cheap, unskilled labor of the country, and has utilized this labor and the means at hand to reap a good harvest. The mining, of course, has been crude, and of that rough character that such labor can only perform. The other mill mentioned, as existing in this county, is situated in the neighborhood of Villa Rica, a small village in the northern part of the county. This mill was originally built by a company who worked the mine some years ago. But not understanding how to manage the water that came into their shafts, and also on account of some little petty quarrels and troubles arising therefrom, they were forced to close down. I visited this property some few weeks since, and was so much pleased with the indications, I spent a number of days in prospecting and testing. Before completing my work, however, I learned that an Atlanta company had leased the mine and expected to begin work at no distant period. The property contains a good vein of quartz, four feet in width, that will yield, by judicious management, $5 to $6 per ton. The country rock is a soft, micaceous schist that will give readily to the pick, and require but little work, comparatively, to strip the vein. The mine is located on a small "mountain" that will yield a considerable amount of good ore before water-level is reached. In connection with this quartz mine there is a good placer that will furnish a considerable field for profitable hydraulic mining. The gold is coarse-grained and easily saved. At one place I visited, about two miles distant from the above mine, and on the strike of the vein, one dozen men were at work sluicing down the side of a hill just below the outcrop of the vein. They had spent a considerable amount of labor and time in digging a ditch to bring water to their claim from a stream one or more miles distant. After accomplishing this, they dug a trench down the side of the hill one hundred yards or more in length, and the depth of the gravel bed. The auriferous earth on either side was then loosely piled in this trench along its full length; and the water from the ditch, that had been confined by means of gates and dams until a large amount had accumulated, was turned loose on the trench. The fall being great, the earth and gravel were soon cleared away, leaving the very coarse gold deposited in the holes and crevices along the trench. This is repeated a number of times and at the end of each week the concentrated material is worked down over mercury in a rocker. In this crude manner they were obtaining three to four pennyweights per hand each day. So much for this county. The mining ground here is rich, only needing proper application of money and labor to produce good paying mines.

In Cherokee County there are two mills of ten stamps each, owned respectively by J. L. CLARKSTON and W. C. HOSKINS. Cobb County has one mill of five stamps, owned by A. R. MCROBERTS. Both of these counties contain good mines, and several years since produced quite a stir in the mining circles of the State. In Cherokee is located the "Sixes," a mine that has yielded a large amount of gold, and capable of yet producing as much if not more than that obtained in the past. From that mine some beautiful crystals of gold have been obtained, and are now preserved in some private cabinets. A great deal of the territory in the two counties mentioned above has not yet been properly prospected, and scarcely a week passes but encouraging news is received from that quarter. One of the principal mines in Cherokee County is known as the Cherokee. It is now in litigation. It was sold by its owners, the MCCONNELL Bros., in 1858 to some parties in the North for $32,000. These parties mined very successfully on the property until the beginning of the war. They had not, however, paid all the purchase money, and a law suit originated. It has never failed to produce well, and there is a fortune in it for some one. I understand this mine is to be opened very soon.

BOULDER WATER WORKS, COLORADO.

Special Correspondence of the Engineering and Mining Journal.

Referring to a notice in the advertising columns of this JOURNAL, regarding the issue of Boulder City water bonds, I beg to say a few words in favor of them. No State is more favored than Colorado for economical and efficient water-works. The snow range furnishes abundant water, and the broken condition of the slopes at the mouth of the cañons presents numerous places which require but a slight touch of the engineering hand to transform them into large reservoirs. In this respect, as well as in many others, the city of Boul ler enjoys great advantages. I made a personal examination of the works with Mr. S. D. SILVER, the Superintendent. At the mouth of Boulder Cañon, on the north bank, a stone wall, some 35 feet high, sufficed for the building of the reservoir of a capacity of two million gallons. The city lies right at the foot of it. There are 38,810 feet of pipe laid, with 36 fire-plugs. It is intended to increase the capacity of the reservoir to five million gallons. Boulder is a prosperous place, the county-seat of the county of the same name, surrounded on the east by a well-irrigated farming country, with coal-mines in the vicinity, two railroads, and controlling the trade of the Boulder Gold and Silver District within a radius of from 3 to 25 miles. B.

A NEW METHOD OF DETERMINING THE HEAT VALUE OF FUEL.—With regard to the important question of the heat value of fuel, it has been proved that conclusions from the results of elementary analysis are very uncertain, and, also, that little reliance can be placed on direct evaporization experiments. In a recent paper in *Die Chemische Industrie*, Dr. Weyl points out the faults of these methods and recommends, as preferable, decomposition of the fuel by dry distillation and analytical determination of the solid, liquid, and gaseous products of decomposition. In this method the accident of too small a sample being used is avoided, as also too great pulverization and drying at high temperature, and the decomposing action of atmospheric oxygen, which is therewith connected, and the whole of the coke is weighed, and its carbon, hydrogen, and mineral constituents determined. The water, tar, and gas that are formed are measured, and their heat of combustion ascertained with the aid of data that have been supplied by Favre and Silbermann and Deville. The final result will, of course, exceed the true combustion value of the coal by the amount of heat equivalent to the work of decomposition into coke, tar, and gas. The decomposition of the coal should be done as quickly as possible, and at a high temperature.—*Iron.*

LABOR NOTES.

WAGES AT HOME.

We take the following interesting statement from the *American Architect and Building News* of August 3d, showing the rates for wages of various trades now prevailing in the principal cities of the United States:

Trades.	Baltimore.	Boston.	Chicago.	Cincinnati.	Indianapolis.
	$	$	$	$	$
Bricklayer	1.75 a 2.75	2.00 a 2.50	1.25 a 1.50	2.00 a 3.00	2.00 a 2.50
Brick Mason (Fronts)	3.00 a 4.00	2.00 a 3.00	1.25 a 1.75	.....	3.50 a 4.50
Carpenter	1.50 a 2.25	1.50 a 2.25	1.25 a 1.75	1.75 a 2.25	1.25 a 1.75
Cabinet Maker	2.50 a 3.25	.....	.....	.....	.....
Finisher	2.00 a 2.50	.....	1.75 a 2.00	.....	1.50 a 2.00
Foundryman	.....	.....	1.25 a 1.50	1.50 a 2.50	2.00 a 2.75
Blacksmith	1.50 a 3.00	1.50 a 2.75	.....	1.50 a 2.50	.....
Whitesmith	.....	.....	.....	1.50 a 2.50	.....
Galvanized Iron Worker	2.00 a 2.35	1.50 a 2.75	2.00 a 2.25	2.00 a 3.50	1.50 a 2.00
Gas Fitter	2.00 a 2.50	2.00 a 3.00	.....	2.50 a 3.00	1.75 a 2.25
Laborer	1.00 a 1.50	1.00 a 1.50	1.00 a 1.25	1.00 a 1.50	1.00 a 1.25
Painter	1.50 a 2.50	2.25 a 3.00	2.00 a 2.50	1.50 a 2.25	1.75 a 2.25
Glazier	.....	2.00 a 2.50	.....	.....	.....
Grainer	2.50 a 3.00	3.00 a 4.00	3.00 a 4.50	3.50 a 4.00	No grain'g
Paper-Hanger	75 a 2.50	.....	.....	.....	15c. p. roll
Plasterer	1.50 a 2.00	2.00 a 2.50	1.75 a 2.00	1.50 a 2.50	1.50 a 2.00
Stucco-Worker	2.00 a 2.50	2.00 a 2.50	.....	1.50 a 2.50	.....
Plumber	2.25 a 3.00	2.00 a 3.00	.....	2.50 a 3.50	2.00 a 2.50
Quarryman	.....	3.00 a 3.50	.....	.....	1.25 a 1.50
Stone Mason	1.50 a 2.50	2.00 a 2.50	1.25 a 1.50	1.50 a 2.00	2.00 a 2 50
Carver	3.00	3.00	2.50 a 3.00	1.25 a 1.75	3.00
Pointers and Washers	.....	2.50 a 3.00	.....	1.50 a 1.75	.....
Rubber	1.50 a 2.00	1.75	1.00 a 1.25	1.25	1.00 a 1.25
Stone-Cutter	2.25 a 3.00	2.00 a 3.00	1.50 a 2.00	2.00 a 2.50	2.50
Stone-Setter	3.00	2.50 a 3.00	2.25 a 2.50	2.50 a 3.00	2.75
Roofer (Tin)	2.00 a 2.35	2.50 a 3.00	.....	2.00 a 2.50	1.50 a 2.00
Slater	.....	2.50 a 3.00	2.00 a 2.25	3.50 a 4.00	2.00
Stair Builder	2.25 a 3.00	2.00 a 2.50	.....	.....	1.50 a 2.00
Steam Fitter	.....	2.50 a 3.50	.....	2.00 a 2.50	2.50 a 3.00

Trades.	New York.	Ottawa (Can.)	Philadelphia.	San Francisco.	St. Louis.
	$	$	$	$	$
Bricklayer	2.25 a 2.50	1.50 a 2.00	2.00 a 2.50	.....	2.25 a 2.50
Brick Mason (Fronts)	3.00	1.75 a 2.25	2.50 a 3 00	.....	3.00
Carpenter	2.25 a 2.50	1.25 a 2.00	1.75 a 2.25	.....	1.50 a 2.00
Cabinet Maker	.....	1.50 a 2.00	.....	.....	.....
Finisher	.....	1.25 a 1.75	.....	.....	1.50 a 2.00
Foundryman	.....	1.00 a 1.50	.....	.....	2.25 a 2.50
Blacksmith	.....	1.25 a 2.00	.....	.....	1.50 a 2.50
Whitesmith	.....	1.25 a 1.75	.....	.....	.....
Galvanized Iron Worker	2.25	1.50 a 2.00	.....	.....	.....
Gas Fitter	.....	1.75 a 2.00	.....	.....	2.00 a 3.00
Laborer	1.25 a 1.50	80 a 1.00	1.20 a 1.50	.....	1.00 a 2.00
Painter	2.50	1.00 a 1.75	2.00 a 2.50	.....	2.00 a 2.50
Glazier	.....	1.50 a 1.75	2.00 a 2.50	.....	.....
Grainer	.....	1.75 a 2.50	.....	.....	3.50
Paper-Hanger	.....	1.50 a 2.00	.....	.....	2.00 a 3.00
Plasterer	2.50	1.25 a 1.75	1.75 a 2.00	.....	2.25 a 2.75
Stucco-Worker	2.50	1.50 a 2.25	.....	.....	2.25 a 2.75
Plumber	.....	1.50 a 2.50	.....	.....	2.50 a 3.50
Quarryman	1.75 a 2.00	1.00 a 1.50	1.50 a 1.75	.....	1.50 a 1.75
Stone Mason	2.25 a 2.50	1.50 a 2.00	1.75 a 2.25	.....	2.00 a 2.50
Carver	.....	3.50 a 6.00	2.75 a 3.25	.....	.....
Pointers and Washers	.....	1.00 a 1.25	2.25 a 2.50	.....	.....
Rubber	.....	80 a 1.00	1.50 a 1.75	.....	.....
Stone-Cutter	.....	2.00 a 2.50	2.25 a 2.75	.....	.....
Stone-Setter	.....	1.50 a 2.00	2.25 a 2.75	.....	2.00 a 2.50
Roofer (Tin)	.....	1.50 a 1.75	1.75 a 2.25	.....	.....
Slater	.....	1.25 a 2.00	1.75 a 2.25	.....	.....
Stair Builder	.....	1.75 a 2.25	.....	.....	1.50 a 2.50
Steam Fitter	.....	1.50 a 2.00	.....	.....	2.00 a 3.00

We condense principally from recent issues of the *National Labor Tribune* the following, showing the wages paid for mining, etc., in various parts of the country: "The Panhandle miners recently held a meeting at Nobestown, Pa. Reports were heard from the various pits as follows: Oak Ridge, 50c. a car, slack and all; Fort Pitt, 50c. per ton; Clark & McCabe, 2½c. per bushel—have been notified of a reduction to 1¾c.; Nixon's, $1.75 per 100 bushels; Laurel Hill, 65c., notified of a reduction; Cherry's Pit, 2½c. and notified of a reduction; Taylor's (Ulp, Midway), 65c. on north side, 55c. on south side, and willing to abide by the decision of the meeting.

"A number of mines on the road are idle. At Latrobe, Pa., miners are paid 25c. per ton. At Coal Bluff, Pa., 2½c. per bushel is paid for mining. Gilmore's miners, near Webster, Pa., are working at 2 cents. Iron City works go in Monday at same price. Many of the miners are engaged harvesting. McIntyre, Pa., miners earn here on an average $1.25 per day. Leechburg, Pa.: The Leechburg coal works are still running at 50c. per ton, and four and five days per week, and two wagons per day, with poor prospects of any thing better in the near future. At West Elizabeth, Pa., 2c. per bushel is paid for mining. New Bethlehem, Pa.: The price for digging here is 45 cents per ton of 2000 pounds. Oakdale, Pa.: There is but little doing here in the mines. Oak Ridge men are getting 40 cents per wagon, run of the mine. The pit boss called a meeting recently to notify the men of a reduction in the price of mining from 50c. to 40c. per wagon, which was accepted. This reduces the price of digging to about 1¾c. per bushel. Shaw Mines, Pa.: The laborers from the mines are working in the harvest fields, earning from $1 to $1.25 per day. Drovosburg, Pa.: $2.50 is paid per 100 bushels for mining coal here. Buena Vista, Pa.: 2c. per bushel is paid for mining at this place. Coalburg, W. V.: 2c. per bushel is paid for mining coal at this place."

The Pittsburg *Telegraph* of July 27th says:

"A general reduction in the price of mining coal in the Monongahela Valley seems imminent. Messrs. Woods & Schrader and Jones, heavy operators, are now paying but two cents per bushel, and O'Neil's men will go in at the same rate on Monday. H. B. Hayes & Bro. say they will not allow their diggers to work unless they mine at two cents. Capt. Joseph Walton is paying two and one fourth cents, and Captain Jos. A. Stone has been paying the same, but the latter has shut down his works, and when he starts up again will pay but two cents. J. C. Risher & Co. have stopped their works, and the men in the employ of Wm. Neel are likewise idle. Coal is now being mined on the Kanawha and lower Ohio at 1¼ cents, and in some places as low as 1¼ cents per bushel, and in view of this fact and the reduction that has already been made in some of the mines here, it is almost certain that there will soon be a general reduction to two cents in the mines up the Monongahela. Out of the eighty mines on the Monongahela and Youghiogheny rivers, only ten or twelve are working."

Miners of the Tuscarawas Coal Company at Uricksville, Ohio, have struck against a reduction of wages from 70 to 60 cents per ton.

The Blue Tent Flume and Ditch Company, Bear Valley, Cal., have some 500 men engaged on its works, paying the workmen from $2.50 to $3 per day.

Pottsville, August 7.—The miners who struck at Atkins's Furnace Colliery for an advance of ten cents per wagon, will resume work to-morrow, the operators having reduced the price of oil fifteen cents per gallon. The men at the Monumental Colliery, operated by Audenreid & Co., at Centralia, struck this morning, on account of a reduction of twenty per cent. They ask for the amount offered by the Reading Canal and Iron Company, which is ten per cent for July wages. The Buck Ridge and Big Mountain Collieries, at Shamokin, where the men are out for an advance of ten per cent, will be closed. It is feared other collieries in that region will shut down in a few days, the miners of the individual operators generally manifesting much dissatisfaction.

Dunellin, N. J., August 8.—In accordance with the programme of the Miners' National Organization, it has been agreed that a general strike shall be inaugurated on or about the 15th inst. The troubles in the coal regions of Pennsylvania will be started in all probability in the Lehigh region. This has been occasioned by the operators refusing to raise the basis of wages that has governed the trade this past year. The men employed in the collieries on the north and south sides appear to be almost unanimous in their consent to engage in a contest with the corporation and individual operators. It has been learned from all indications that the men employed by the coal companies of the Pennsylvania Railroad are prepared for a general strike.

WAGES ABROAD.

In addition to the publication, in this journal, on the 6th and 27th of July, we give the following additional information relating to the rates now prevalent for wages, prices of living, etc., at various European centers, recently furnished the Department of State at Washington by resident Consuls:

London, England.—General Badeau, the Consul-General at London, sends a report, in which he states that during the past five years wages have increased gradually about ten per cent, while the cost of living has increased about 25 per cent. Clothing is about 30 per cent higher, while fuel has not risen in price. Agricultural laborers get from $2 to $3 per week, including beer; building laborers and gardeners from $4.40 to $5.10 per week; bricklayers, carpenters, masons, and engineers from $6.80 to $11 per week, and cabinet makers, printers, and jewelers from $8 to $12.30 per week, although the best marble masons and jewelers receive $14.75. Bootmakers and tailors get from $4.86 to $7.65 per week, and bakers from $4.65 to $7.25 with partial board. Women servants are paid from $70 to $240 per annum. Railway porters and laborers on public works get from $4.45 to $12 per week. Rents have risen some thirty per cent, and are for artisans in London from $1.20 to $2.40 per week for one or two rooms. Labor and trade are greatly depressed, no change for the better being yet apparent. The prevalent strikes are unmistakable indications of want of commercial prosperity, and the markets for staple commodities are very dull, and greatly unsettled by war rumors.

Cork, Ireland.—Our Consul at Cork, in his dispatch to the Department of State, gives the following information: Agricultural laborers get 48 cents a day, coal-heavers, machinists, gas-fitters, and bakers, $1.09; masons, shoemakers, painters, and joiners, $1.21. On public works, laborers earn from 48 to 60 cents a day. On the railways, conductors receive $4.38 to $7.29 per week; engineers, $1.21 to $1.70 per day. Last summer the railway employés struck for an advance, but failed. The cost of living to the laborer and the mechanic is about $85 per annum. Trade is muchd epressed, with many failures. Wages and cost of living have increased abouto ne sixth since 1873. The amount of paper money in circulation in Ireland is stated at $35,000,000, with a reserve of coin in the banks of $14,306,589. Paper money and coin are on a par. The importations of wheat and Indian corn are very large.

Hamburg, Germany.—Our Consul at Hamburg reports that, since the consolidation of the German Empire and the close of the war, the cost of living has greatly increased, having nearly doubled in the last ten years, while the price of labor has not proportionately advanced. During the last two years, business of every kind has been very dull. Within the last three months, an improvement is manifest, and a more confident feeling prevails among business men that the worst is passed. The labor of the Hamburg district is performed mostly by men, few women being engaged. The hours of labor are from daylight to dark. Half an hour is allowed for breakfast, two hours for dinner, and half an hour, at 4 P.M., for lunch. Farm hands are paid by the year; first-class hands receiving $85 to $114, and second-class $57 to $85, board included. These laborers live frugally, clinging with great tenacity to old customs, and are honest and law-abiding. Mechanics are paid by the day, receiving from 70 to 85 cents, board and lodging not included. Clerks in stores, offices, banks, etc., receive from $285 to $714 and $1428 per annum. Their cost of living, if single, varies from $285 to $714 per year; if married, one half more. All wages are from 10 to 20 per cent higher than in 1873.

Rome, Italy.—Our Consul at Rome furnishes the following facts relating to trade and labor in that part of Italy: "There is, as everywhere, a greater supply of labor than the demand. The wages of woolen, cotton, and silk spinners and weavers have not increased during the last ten years. There has been a slight increase in the wages of masons, bricklayers, blacksmiths, and servants. Carpenters' and joiners' wages have increased 40 per centum; tailors', shoemakers', and stone-cutters', 20 per centum; machinists, 15 per centum. A day's work is ten hours, with half an hour for dinner in winter, and an hour and a half in summer. The advance in wages since 1873 is slight, and bears no proportion to the advance in the cost of living. When Rome became the capital of Italy, owing to the great influx of people, rents advanced from 75 to 100 per centum, where they still remain. Articles of food advanced in price 25 per centum, and have not yet sensibly decreased. Wages also increased at the same time—in some cases 40 per cen tum."

Serious Strikes in France.—Paris, August 8.—The cabmen of Paris, who, to the number of four thousand eight hundred, are on a strike, will hold a general meeting at the Cirque Fernando to-night. There are hardly any cabs in the streets. The strikes in the north of France are recommencing. All the coal-pits at Denain, in the Department of Nord, are deserted.

In the Valenciennes district there are about 9000 men on strike. At St. Etienne 700 men engaged in the dye-works have struck for an increase of wages, and in Bordeaux 450 journeymen bakers have struck for the same reason.

THE PROSPECTS ABROAD.

The *Journal of Commerce* of the 1st inst. says: "While very friendly to the export trade, we can not encourage the filling of that order from Lancashire for 1000 American operatives for the cotton mills there. American labor is the one thing the export of which is wholly undesirable. It is bad for the laborer and bad for this country. There is no land on the globe where the laborer is more sure of work at good wages than in the United States. Business in England is far more depressed than with us. The 1000 cotton operatives are called for by a letter dated last month, when the Lancashire strikes were in full blast. Now, the strikes are about over, and Americans going to England in response to the call would probably find the places full or the wages too small to support life."

The Lonaconing Valley (Md.) *Times* says: "The exodus of our citizens to the West still continues. Every week two or more families leave in hopes of bettering their fortunes. More than one hundred and fifty families have left the region."

We hear reports of a considerable emigration now going on from the Pennsylvania coal regions to the Western agricultural districts. We note the following prices which provisions are selling for at Centerville, Iowa:

New potatoes 20 to 25 cents per bushel here. Eggs bring 5 cents per dozen; butter, 8½ cents per pound; oats, 18 to 20 cents per bushel; corn, 30 to 40 cents per bushel; and fruits of all kinds are very cheap.

GENERAL LIBRARY University of MICHIGAN

At Princeton, Miss., we note the following prices for various articles of living: Best beef, 7½ cents a pound; chickens, 8 cents apiece; eggs, 3 cents a dozen; fruit, for the picking almost.

Bordeaux, France.—Our Consul at Bordeaux furnishes the following review of the various industries of the Gironde. Bordeaux, with 150 workingmen's societies, has thus far been exempt from strikes or other reckless action. The workmen there are more patient, orderly, and prudent than the workingmen in other parts of Europe. Farm laborers are frequently so economical as to become quite wealthy proprietors. They are paid from 380 to 420 francs a year, and are lodged and boarded. Day laborers, without board, receive two and a half to three francs a day, with a bottle of wine. A suit of clothes costs from fifteen to twenty francs. Coopers, ship-carpenters, and foremen in wine cellars, by great frugality, attain a condition of comparative independence. The average wages of mechanics are from four to four and a half francs per day—an increase of nearly one franc since 1873. The cost of living has not increased, but rather decreased. A government cigar factory was established in Bordeaux in 1816. It employs 150 men and 1400 women. The men earn about five francs and the women two francs a day. Over 700 cooper shops exist in the district, employing more than 4000 men. About 15,000,000 bottles are made annually in the city by seven factories, employing 700 workingmen, who are paid by the 100 bottles, and who earn as high as twelve francs per day, according to their skill. In the manufacture of liqueurs and confiteurs men earn from three to four francs per day, and women about half as much.

Dublin, Ireland.—Our Consul at Dublin says: "From the annual average amount of the circulation of the six banks of issue in Ireland, a return of joint-stock banks doing business in Ireland, post-office savings banks, returns of distilleries, etc., it appears that the skilled mechanic gets per day 6s. 6d., and the unskilled mechanic receives 17s. 6d. per week. Agricultural laborers are paid per day from 1s. 2d. to 2s. 6d. permanent, and from 2s. 6d. to 3s. 6d. in the busy season, the rate of wages varying very much according to locality and season. Near large towns the rate is much higher than in the country districts; also, in spring and harvest the rate is higher than at other seasons. The price of wheat per 112 pounds, taking the average of six principal markets in 1851, was 8s. 6d., and the price obtained in the same markets for 1876 was 10s. 3½d. Oats have varied during the same period from 5s. 8½d. to 7s. 9½d.; potatoes from 3s. 11½d. to 3s. 9d.; beef from £2 2s. 2½d. to £3 14s. 3d., in each case the quantity from which this average is taken being 112 pounds. The amount of the state circulation of the six banks of issue in Ireland in the year 1865 was £5,986,950, which was £367,544 under the issue fixed by the act, and in 1876 the state circulation was £7,499,183, which was £1,136,996 over the issue fixed by the act. In 1847 the number of depositors in the trustee savings banks in Ireland was 80,351, and the amount deposited was £2,410,720, while in 1876 the number of depositors had fallen off to 56,849, and the amount deposited to £2,178,266.

MINING NEWS.

CALIFORNIA.

From the *Bodie Standard* of the 31st of July we learn of a very rich new strike in the Bodie mine, in speaking of which that paper says:

"The ledges tapped by this cross-cut are the Burgess, Bruce, Mollie, Bodie, Gildea, and Granger. The drift on the Burgess is in about 60 feet and all the way across between the walls high assays have been obtained. When the vein was first struck, it was not nearly so rich as now, but has widened out and improved in quality until now the fifteen-inch ledge is four feet wide, and the face of the drift from hanging to foot-wall assays $3000, while choice samples will go over $4000 per ton. The walls are well defined and the gold can be plainly seen as the ore is knocked down by the pick or blast. The formation in this ledge seems to be decomposed quartz, with a hard stratum running through the center and a clay seam along the wall. The Bruce ledge is also a bonanza within itself. This vein was two feet when first struck, and of rather a low grade, but has widened out as the drift advanced until nearly a four-foot ledge is opened to view. The pay-streak is from wall to wall, and it is, without doubt, as rich ore as was ever struck in the camp. It will probably average across the vein $2000. Stoping has been commenced, and at every turn high-grade ore is encountered.

"Very little work has been done on the Mollie, Edith, or Granger ledges, but so far as prospected the returns were very satisfactory. There are 50 men now employed at the mine, and every few days others are added. The ore is sacked in the mine and hoisted up ready to be shipped to the Syndicate mill. The result of Friday's run of the mill was 287 pounds of amalgam, and the first bar of gold will be shipped next Monday or Tuesday. The Belvidere is also shipping ore to this mill; but should the Bodie have the use of the mill for two weeks, it is estimated that their bullion shipments will amount to at least $150,000! And if for a whole month, $300,000!

"The stock has rapidly advanced from $5 last week to $17 per share to-day, and we are gratified to know that a considerable quantity was held among the people of Bodie, many of whom still retain it in the expectation of soon receiving dividends. Within our acquaintance quite a number of hard-working, deserving people, hold from 100 to 1000 shares each whose profits at the present rates amount to about $15 per share.

"The new Bechtel Mill has started and will crush ore from the mine of the same name. This is a very complete 10-stamp mill, and we may expect to hear good returns from Bechtel ore. The Spaulding has erected new hoisting works, and its engine was started Monday. New hoisting works are soon to be placed on the South Standard. Improvements are going on in every direction."

THE MAMMOTH MINE.

Of this mine the *Standard* speaks as follows:

"The mine is situated at a point on the extreme eastern edge of California, on the eastern slope of the Sierras and about 70 miles southwest of Bodie, on the Owens River. At the northwest end of the mine the exposure of ore is wonderful. Denuding agencies have stripped the lode for a length of 200 feet, cutting away the wall rock down to a depth of 150 feet, showing a width of lode matter at the base of the outcrop fifty feet wide, and exposing alone 100,000 tons of gold and silver-bearing ore, ranging from $50 to $300 per ton. The magnitude and importance of this outcrop must be seen to be appreciated. Eight hundred feet in a southeasterly direction the lode again crops out to the surface, showing a side section of the lode well defined. The intervening space between these points appears to retain all the valuable features of the lode as to size and value which are exhibited at the northwest end, the assays averaging even higher in gold. No estimate has yet been made as to the amount of ore in sight at this point of exposure, but it is large. On the northeast end of the mine a tunnel has been commenced which will tap the lode at a depth of 1000 feet below the outcrop.

"In addition to the mining property the company have purchased 2500 acres of the finest pine forest land, thickly covered with pine, fir, and tamarack. A saw-mill has been erected, which is now turning out about 10,000 feet of lumber per day.

"A water-shed of great extent lies between the headwaters of the San Joaquin river and the mine, supplying water to seven picturesque mountain lakes. The overrun from these lakes runs through the property of the Mammoth Company, yielding a power which is now being utilized, equal to 1000 horse-power. A twenty-stamp mill has been ordered and will shortly be on the ground. Next summer there will be probably sixty or eighty additional stamps set up to keep pace with the ore extraction."

THE BEARDSLY MINE.

The Calaveras *Chronicle* has the following concerning this mine:

"We have returns from the richest quartz we ever heard of being worked. Some time since, Mr. Beardsly, of West Point, discovered a quartz ledge on the north bank of the South Fork of the Mokelumne, opposite the San Bruno mine a Mosquito. Prospecting disclosed the fact that the rock was rich beyond comparison. A small lot of it—five tons—was taken to Harris' mill at Sandy Gulch and crushed, yielding sixty-three ounces, Reckoning the gold to be worth $17 per ounce—and it will assay better than that—the total yield of the five tons is $1071, an average of $214 per ton! The lode is not fairly developed yet, and those who know are of the opinion that the richest rock has not been reached."

OCEAN BEACH MINING.

The *Stock Report* says:

"Gold mining on the ocean beach near Aptos, Santa Cruz County, is prosecuted by four companies, but until some more successful method of working the black sand is introduced the profits will be moderate. The sand bed ranges from eighteen inches to four feet in thickness, and the sand yields about $2 to the ton. The active miners, who constitute the stockholders in the companies, make about $2 per day to the man, which we are free to remark is a very fair return for a new enterprise. It is better to live in Santa Cruz on $2 per day than to loiter about Pine street cursing the ill-luck which has attended some stock speculation."

AN AURIFEROUS CEMENT MILL.

The San Francisco *Call*, of a late date, had the following with reference to a new kind of cement mill being constructed in that city for the use of a mining company in Calaveras County:

"Messrs. Prescott, Scott & Co., at the Union Iron Works, are putting the finishing touches to a machine to be used in auriferous cement mining. The machine is known as Drake's cement mill, and has been built to the order of the New York and Calaveras Gold Mining Co., whose mine is near Milton, Calaveras County. Persons interested in mining are invited to inspect the machine. The mill is in the form of a tube forty feet in length, the staves of which are five-inch T rail bars. At the upper end of the tube the cement, as broken from the mine, is dumped from iron cars. This machine being in motion, the gravitation of the cement drives it against the sharp edges of the T bars, which tear the material apart. At the same time a large body of water is allowed to enter the upper part of the tube, which helps the work of separation, and carries the finer material and gold between the bars to an apron underneath, which carries it into the amalgamating sluices. The boulders and coarser material slide gradually down the machine over the central and lower riffle and out, clean as a whistle, to the waste dump. The machine weighs 124,000 pounds as it stands. It will be driven by a fifty-horse-power engine, with a 14×24 inch cylinder, and supplied with steam by a boiler sixteen feet long and 50 inches in diameter. Heretofore it has been a difficult matter to work auriferous cement so as to liberate the precious metal, and it is expected that with the new machine the New York and Calaveras Company will have no further trouble in this regard."

NEVADA.

From the Gold Hill *News* of July 31st we take the following, concerning the condition of the principal mines of the Comstock:

"The stock market has been particularly lively for the last three or four days, induced principally by the great expectations in Ophir. Yesterday being the appointed inspection day, about thirty experts and newspaper men, including our representative, visited the Ophir mine, and made a critical examination of the chief point of interest, the new cross-cut on the 2000 level, 100 feet north of cross-cut No. 1. Suffice it here to say that they all saw where the diamond drill had been following a narrow cross-course or offshoot from the main vein, giving good prospects, but deceiving all concerned. At the distance of eighty-two feet from the main lateral drift the face of the cross-cut had passed into three or four feet of rather low-grade ore, which looks as if it might be the west side of the anticipated ore vein. The distance east, however, would indicate a greater easterly trend to the vein than was calculated upon. Taken altogether, with the comparing of notes and opinions among the visitors, the feeling among them was one of disappointment.

"The water is about all out of the 2000 level of the Julia, and cross-cutting for the ore vein will be resumed as soon as hot air and other circumstances will permit. The strong and good air current through the Sutro Tunnel has been turned down a winze to the 2000 level of the Savage, affording splendid ventilation to the lower portion of that mine. The total length of the tunnel is 20,171 feet. The face of the header is rapidly nearing the Savage incline and will soon connect with it. When the connection with the Combination shaft is also completed, the strength of the air current pouring through the tunnel will be considerably augmented. The temperature of the air in the tunnel is considerably reduced since connection with the Savage workings, and the atmosphere is very much purer and better. Cross-cutting is not yet commenced at the 2300 level of the Crown Point and Belcher, but will be before long. Meanwhile, the main drift at that level is being continued north from the Crown Point to connect with the Yellow Jacket. This will give as fine ventilation as can be found in any portion of the Comstock. Work is resumed in the old upper workings of the Kentuck mine, where good ore is known to have been left in years past.

"The present hot weather greatly augments the intense heat at the lower levels of the mines generally, and much impedes ore extraction and development, especially in the Bonanza mines, seriously interfering with the much-needed repairs to the Consolidated Virginia shaft."

EUREKA CONSOLIDATED.

A letter from the superintendent of this mine, dated July 27th, 1878, says: "Mining operations have continued through the week, with good progress made in extending drifts, etc. Pumps have been set in the incline winze, and tried and found to work well, with sufficient capacity to handle any amount of water likely to be met with for a long time to come. There have been some 2000 tons of ore extracted from the mine during the week, and no apparent diminution in the amount of ore in sight throughout the ore-producing portion of the mine. All of the winzes that have been sunk below the 11th level are in ore and are yielding largely. I have no doubt that the 12th level will prove equally productive with any level that has yet been opened in the mine.

"The furnaces are running well, and are turning out the usual quantity of bullion, which is being shipped right along as fast as possible."

THE HAMBURG MINE.

A letter from the superintendent of this mine, dated July 27th, 1878, says:

"Since my last report there is no change to note in the upraise above the 250 level, the vein remaining about the same size, and yielding the same quantity of good ore. The winze below the 250 level was sunk 28 feet, making a total depth of 129 feet, measuring on the incline; the bottom is in broken limestone and iron.

"Four hundred and fifty level—The east cross-cut from the south drift was advanced 31 feet; total distance to run before connecting with the winze from the 250 level is 92 feet. In running this cross-cut we cut the continuation of the ore vein found some distance further north in the main drift; it shows several feet of good ore and a large amount of iron and low-grade ore. The prospecting drift on the vein 484 feet south of the shaft shows a steady improvement. This drift is now 25 feet from the main drift. We have started an upraise from near the end of the main south drift, which is now up 20 feet in good ore.

"Six hundred level—Main drift advanced 10 feet, making a total of 335 feet; the rock is quite hard."

THE MANHATTAN MINE.

The Austin *Reveille* of the 27th inst. says of this mine: "During the week ending yesterday morning the mill reduced 129 tons 554 lbs. of ore, of the assay value of $21,232.40.

"We are stoping on the 517, 600, 675, and 750 levels of the Curtis shaft. The stope on the latter level is producing very good ore. The grade of ore from the 517 level has fallen off somewhat, but the 600 and 675 stopes continue about the same. Fine ore has been encountered in the 560 west drift. The winze from the 517 level is now down 60 feet, and has been in good ore most of that distance.

"In the Frost shaft the 570 stope continues to improve as we go west. The 570 west drift will be started again in a few days. The 670 stope shows little if any change, and is producing all the ore required. Winze No. 2 shows good ore, and we are making good progress in sinking it. We are pushing the 770 west drift forward as fast as possible."

THE MINES OF THE WHITE PINE DISTRICT.

The *Stock Report* of recent date contains the following concerning these mines:

"The Eberhardt and Aurora Tunnel is being pushed forward vigorously, and is now in some 3800 feet, and nearly opposite the old Eberhardt mine. We are informed that Capt. Drake will start two lateral drifts from the tunnel to explore this mine as soon as the header has been driven a sufficient distance past. The forty-stamp mill at Eberhardt is running steadily on the company's ore, and there is already enough ore on the dumps, of an excellent quality to keep the stamps busy for more than two months to come, and the mine is looking better than it has for some time past. Altogether, the outlook for Treasure Hill is by no means unfavorable. On White Pine mountain, the Jennie A. and Black Rock Mining Company's property, under the management of Superintendent Kendall, is being vigorously developed, and there are already some six thousand tons of excellent ore in sight, and the mine is steadily improving in appearance as depth is attained. In the history of smelting in this district, the Jennie A. company is the first one that has gone systematically and intelligently at work to develop its mines before constructing a costly furnace, and its future success is almost a certainty. The company owns a spring on the western side of the mountain which is now running some 10,000 gallons of water per day, and a furnace will probably be built as soon as developments in the mine will justify it.

"The King Company's furnace shut down a few days ago, after a successful run of twenty-seven days."

Our special correspondent, writing from Reno, under date of July 23d, says:

"At present the new Pyramid Camp, about 32 miles northerly of Reno, attracts attention.

"The Jones and Kinkead Mining Company has rented the old Auburn mill until September 15th, and is trying some of its ore. The clean-up last week of 70 tons yielded 5 bars of 800 and 850 fine, yielding about $5000. Its appliances for hoisting are very limited; it therefore also takes custom ore. A lot from the North Bonanza, Flowery district, said to assay $103, about ($103.50?) yielded $69. The ore is base and requires a chloridizing roasting (Stetefeldt furnace).

"When the Pyramid Camp is more developed, I will let you hear more of it.

"The United Brooklyn Company, five miles north of Reno Peavine district, is working steadily prospective work. They are sinking now an underground shaft or winze 6×5½ feet in the clear, from a station two hundred feet under ground, and propose to cross-cut west to the ledge after completing one hundred and fifty feet of new winze Their hoisting capacity is good, overground being a 9-inch link motion winding engine, and at the underground station a 7½ inch double-cylinder Copeland and Bacon hoist, with capacity to hoist 350 additional feet. Water is the only trouble of this company, and it hopes to surmount that with the present supply of pumps on hand."

NOTES.

Frightful Powder Explosion in Russia.—Bucharest, August 8.—By the explosion of the Russian powder magazine at Fratesti yesterday, fifty-five persons were killed and thirty-one injured.

The Blake vs. the Alden Crusher.—On the 30th ult., Judge Blatchford of the U. S. District Court, in this city, granted an injunction restraining Messrs. Copeland, Dodge & Co. from making or selling the "Alden" crusher.

Extension of the Atchison, Topeka, and Santa Fe Railroad.—The contract for the construction of one hundred and thirteen miles of the grade of the Atchison, Topeka, and Santa Fe from Willow Springs to Las Vegas, will be let on the 15th of August.

A Growing Coal Company.—The Kittanning Coal Company recently became the purchaser of 42,000 acres of land, most of it containing coal. The same company, at the same time, bought additionally the mineral right of 52,000 acres, making a total purchase of mineral land to the amount of 94,000 acres. With lands previously owned, the company will have the mineral right of over 103,000 acres.

Another English Coal-Mine Explosion.—London, Aug. 7.—An explosion occurred this afternoon in a coal mine at Scremerston, near Berwick. Thirty-five men were in the mine at the time, all of whom have been rescued. Several were severely burned, but only one was dangerously injured. The men were working with naked lights.

Antimony as a Negative Element.—Mr. R. J. Nunn calls the attention of electricians to the use of antimony as a negative element to replace carbon in some galvanic batteries where sulphuric acid is used as the exciting fluid. He mentions among its advantages its cheapness, the absence of scaling and disintegration, and the fact that galvanization begins almost immediately on immersion. He overcame the brittleness of the proposed substitute by casting it on a core of copper.—*Iron.*

Alaska's Mineral Resources.—A writer in the San Francisco *Chronicle* maintains that the resources of Alaska are abundant in quantity and magnificent in quality. In the mining region near Sitka, ten well-developed ledges of gold-bearing quartz have been uncovered, and eight mines are already located and will soon be in active operation. These ledges, which have been followed three miles or more, are pronounced, by a competent Russian engineer, capable of averaging $32 per ton. Experienced miners who have examined them think the Alaska yield of gold and silver will eventually be larger than that of California and Nevada combined.

Artesian Wells.—In Iroquois County, Ill., eighty-five miles south of Chicago, 53,500,000 gallons of flowing water from artesian wells are daily supplied for irrigating land. No well is over seventy-five feet deep. There are 200 wells within a radius of twenty miles, all of small bore. The prairie is ninety feet above Lake Michigan, and there is no high land for 200 miles which can furnish a fountain-head to these wells. Paris derives a flowing current of 6,000,000 gallons from two such wells. Three more wells are now being sunk, which, with the old ones, will give a subterranean supply ample for 3,000,000 inhabitants. A correspondent of the Baltimore *Sun* says that engineers are confident the artesian river flowing under San Francisco, leading direct from the exhaustless lakes of the Sierra Nevada, is quite adequate to supply several cities of its size.

The Belgium Zinc Industry.—The following data on the production and profits show the effects of the thorough commercial and technical organization for which the Vieille Montagne Company is famous. The production of the company's zinc mines rose from 54,569 tons of ore in 1876 to 68,095 tons in 1877, that of its lead mines from 5914 tons in 1876 to 6833 tons of ore in 1877, while the output of coal sank from 78,100 tons in 1876 to 53,499 tons in 1877. The smelting works increased their production of spelter from 38,518 tons to 43,238 tons, of which 35,987 tons were rolled into sheet zinc. The total profit was $444,625, and after deducting 20 per cent for the sinking fund, 10 per cent for the board of directors and commissioners, 2½ per cent for the general manager, a dividend of $30 per share or $337,500 was divided among the shareholders.

Uniting the Hudson and East Rivers.—The feasibility of an important project of uniting the Hudson and East Rivers by means of a great ship canal is again attracting attention. The subject has been talked about at different periods for half a century, but nothing was ever accomplished till Gen. John Newton made surveys of different routes and submitted his report to the government. Congress then voted to make an appropriation of $300,000 for the purpose of commencing the work. Gen. Newton states in his official report that the probable cost of making a navigable channel, with fifteen feet of water, would be $2,777,571, and with 12 feet of water the cost would be $2,270,825. As soon as the right of way has been secured to the United States Government from owners of land along the Harlem River, and some other preliminary matters are arranged, it is expected that this great project will be commenced. That it would promote the commerce of the port there can be no question.

The Gold Deposits of British Guiana.—A correspondent, writing from Sans Souci, Surinam, to the *American Mail and Export Journal*, says: "Large fields of gold were discovered some time ago in this colony, the metal lying close to the surface. The gold is got out by washing, the same as in the neighboring colony of Cayenne. Gold is found in the interior all over the colony. The government grants permission to prospect and work during one year for four cents per hectare, and renews the grant without increased charge. The distance from Paramaribo to the gold fields is from six to eight days' journey by water. Most of the deposits are on the banks of the Marowine, Surinam, Saramacca, and Coppenam rivers. The other rivers also possess auriferous lands, and are navigable by steamer. The climate is healthy, and the results of the workings so far are satisfactory."

Failures of Coal and Furnace Companies.—The Clifton Coal Company, also owners of the Bedford Furnace, at Clifton, W. Va., assigned on the 2d inst. their personal property to pay unsecured liabilities to the amount of $25,000. In May last the company made a deed of trust, and issued bonds to the amount of $125,000, bearing 8 per cent semi-annually at New York. The personal assets will pay from 30 to 50 per cent of the unsecured liabilities.

The Virginia Salt Furnace, Clifton, W. Va., made a deed of trust on the 2d inst., and issued bonds to the amount of $50,000.

The Hamilton Furnace property, Missouri, including 7000 acres of land, was recently sold under a foreclosure of mortgage. The mortgage was for $20,000, but the property sold for $11,500.

The Lowell (O.) Furnace property has been purchased by Jas. McCreary, of Pittsburg, for $10,000. Cost originally $180,000.

Coal Discovery at Aurora, Nevada.—They claim to have discovered a genuine bituminous coal vein about eighteen miles north of Aurora, Nevada, in what is known as Coal Valley. The Esmeralda *Herald* says: "The discovery promises well and the proprietors are quite jubilant over what they consider the best indications which have yet been uncovered in the valley. The vein at a depth of seven feet shows between six and seven feet thick of a bright, clear-looking coal, which, in the more solid places, sparkles like the Black Diamond coal of Mount Diablo. Samples were brought into town a few days ago, and several trials were made as to its quality. A fire was made in a blacksmith's forge of about three shovelfuls of the coal, and a heat gotten up sufficient to weld two pieces of iron one inch in diameter. Several experiments were made with it; among others the welding of a toe-cork on a horseshoe is as great, if not greater, than any heat required in the business, and that as this coal did that satisfactorily, it has all the qualities essential for its use in a forge. It lights tolerably easy, and a fire made with it in the open air burned brightly and steadily, leaving no slag. Sufficient depth has not yet been attained on the vein to determine its full value, but enough is known to warrant the owners in putting men at work to sink a shaft and run drifts in different directions with the intention of exploring the vein more thoroughly."

What is Gold?—A recent action at the Thorne County Court throws an odd light on the laxity of definition with which the precious metals are afflicted in this country. A man named Whitehead, of Thorne, sued a jeweler named Gordon, living at Grimsby, for three guineas, the value of a chain sold by the defendant as "gold," but which plaintiff contended was not gold, and was not what was sold by jewelers as gold. Plaintiff produced a witness who swore that the Albert did not contain more than one part of gold to 99 parts of copper, and he said that the utmost value of the chain would not be more than 10s. He admitted that on the swivel there was a mark giving the proportion of gold as 9 carats, but he said that this mark only applied to the swivel, and not to the whole chain. Defendant admitted that he sold the chain as gold, having bought it as a gold one from a Birmingham manufacturing jeweler. As a proof of what he said, he offered to allow the chain to be sent to any assayer, and promised, if it was not gold, to return plaintiff his money and pay expenses. The assayer will, we take it, be puzzled; for the gold of commerce is of no regulation strength and fineness, Twenty-two carat gold is more talked about than used for jewelry, and eighteen and sixteen carat are far more generally employed. For gold chains very common qualities are used, and it is difficult to say at what point the degradation of the precious metal ceases. If we are not mistaken, the chain now *sub judice* is, in quality, akin to the metal known in the trade as "jewelers' gold." We are not certain of the proportion of gold and alloy in this precious product, but rumor says that to every golden sovereign a copper coal-scuttle is added.—*Iron.*

The Bear Paw Mountain Gold Country.—The Sioux City (Iowa) *Journal*, in a recent issue, says: "The latest and most trustworthy information in regard to the new mines is from J. J. Healey, a well-known Montanian, who has visited the locality himself, and writes intelligently and in a very encouraging tone. He states in a letter that but meager developments have as yet been made, but what little has been done demonstrates beyond all doubt that gold in paying quantities exists in all of the many streams flowing from the mountains. There is no danger to be felt by miners from the Indians, as General Crooke and a large force of soldiers have located in the mountains for the purpose of protecting them from the Indians. The fact that many frontiersmen well acquainted with the country have joined the stampede is additional evidence that the rumors of the existence of gold in the mountains have a groundwork in merit.

"The effect of the stampede upon the Black Hills country is, for the present at least, very injurious. It is dispossessing the hills of many successful miners and business men, and, as each man gathers up and takes with him more or less money, the circulating medium in that section is said to be distressingly scarce. The stampede promises to largely increase as the days go by. Every report that comes from the mountains brings new enthusiasm with it. The Bear Paw Mountains are admirably adapted for mining, and there will, no doubt, be even a greater rush there than to the Black Hills, and, from all indications, with better results.

"Arrangements are making for a large party to go from Sioux City to Bear Paw by steamer. The boat will leave this city on Saturday, August 24th. A party has contracted for transportation for two hundred men with their outfits."

A telegraph dispatch to the New York *Herald*, dated Bismarck, D. T., August 6th, 1878, says: "A representative, of Powers Bros., of Benton, who helped to work up the Bear Paw excitement, reports that the interest has died out in Benton; that only forty men are left in the diggings, and that the placer diggings are not worth working. It is claimed, however, that there is good quartz in sight."

STATISTICS OF COAL PRODUCTION.

This is the only Report published that gives full and accurate returns of the production of our Anthracite mines.

Comparative statement for the week ending August 3d, and years from January 1st:

TONS OF 2240 LBS.	1878. Week.	1878. Year.	1877. Week.	1877. Year.
Wyoming Region.				
D. & H. Canal Co..	60,044	1,132,929	2,033	1,283,899
D. L. & W. RR. Co.	54,765	1,125,396	5,641	1,306,199
Penn. Coal Co.....	26,018	447,261	12,635	638,755
L. V. RR. Co.....	9,801	444,438	1,036	575,117
P. & N. Y. RR. Co..	256	16,220	.....	32,728
C. RR. of N. J.....	25,163	479,065	*25,429	857,206
Penn. Canal Co....	8,865	162,474	320	216,810
	184,912	3,807,783	47,094	4,910,714
Lehigh Region.				
L. V. RR. Co.....	61,769	1,344,062	28,603	1,710,876
C. RR. of N. J.....	27,030	678,140	*29,936	871,853
D. H. & W. B. RR..	.....	15,630	... .	8,860
	88,799	2,037,832	58,539	2,591,589
Schuylkill Region.				
P. & R. RR. Co	3,496	2,479,751	143,047	3,517,824
Shamokin & Lykens Val....	13,374	393,441	9,214	360,173
	16,870	2,873,192	152,261	3,877,997
Sullivan Region.				
Sul. & Erie RR. Co.	672	18,679	125	5,775
Total	291,253	8,737,486	258,019	11,386,075
Increase.....	33,234	.....	.....	.....
Decrease	.....	2,648,589	.....	.....

* For the nine days ending July 31.

The above table does not include the amount of coal consumed and sold at the mines, which is about five per cent of the whole production.

Perth Amboy Business: Tons.

Received for the week	20,034.11
Shipped for the week.....	9,956.07
On hand August 3d.....	51,976,08

Receipts of Coal at Boston, for the week ending August 2d and year from January 1st:

TONS OF 2240 LBS.	1878. Week.	1878. Year.	1877. Week.	1877. Year.
From Alexandria and Georgetown.....	2,478	42,439	.....	40,104
Philadelphia.....	19,627	352,964	12,368	349,297
Baltimore.....	1,493	89,045	1,080	78,351
Other places.....	12,151	149,505	5,322	167,309
Great Britain	742	15,061	.....	1,353
Nova Scotia..... ..	380	8,671	2,627	14,498
Total..... ..	36,871	657,685	21,397	650,912

Receipts and shipments of coal at Chicago Ill., for the week ending August 3, and year from January 1st.

	Week. Tons.	Year. Tons.
Receipts.....	39,623	902,173
Shipments..... .	7,111	122,060

Belvidere Delaware Railroad Report for week ending August 3:

	Week.	Year. 1878.	Year. 1877.
Coal for shipment at Coal Port (Trenton).....	418	2,947	12,286
Coal for shipment at South Amboy	6,136	286,321	350,963
Coal for distribution.....	2,392	96,540	98,318
Coal for Company's use.....	620	46,467	42,593

The Production of Bituminous Coal for the week ending August 3, was as follows:

Tons of 2000 lbs., unless otherwise designated.

	Week. Tons.	Year. Tons.
Cumberland Region, Md.		
Tons of 2,240 lb.....†	.....	804,169
Barclay Region, Pa.		
Barclay R. R., tons of 2,240 lbs.....	6,055	177,261
Broad Top Region, Pa.		
Huntingdon and Broad Top R. R.....	2,899	81,574
*East Broad Top.....	834	35,463
Clearfield Region, Pa.		
*Snow Shoe.....	303	14,032
*Tyrone and Clearfield..... .....†	31,591	697,316
Allegheny Region, Pa.		
*Pennsylvania R. R	4,304	115,844
Pittsburgh Region, Pa.		
*West Penn R. R.....	2,770	107,125
*Southwest Penn. R. R.....	706	14,756
*Penn & Westmoreland gas coal, Pa. R. R.....	9,532	389,151
*Pennsylvania R. R.....	4,420	238,536

*For the week ending July 28.

† This report was not received this week.

The Production of Coke for the week ending July 28th:

Tons of 2000 lbs.	Week.	Year.
West Penn R. R.....	1,873	47,935
Southwest Penn. R. R.....†	14,167	443,191
Penn. & Westmoreland Region, Pa. R. R.	1,559	39,485
Pittsburg, Penn. R. R.....	2,004	54,933
Total...	19,603	585,544

COAL TRADE REVIEW.

NEW YORK, Friday Evening, Aug. 9, 1878.

Anthracite.

In our last we announced that the Philadelphia and Reading R. R. Co. would make an additional drawback of 35c. per ton on all coal destined to New York harbor. The following is the text of the circular, which bears date of August 2d:

"On and after Monday, August 5th, and until further notice, a drawback of thirty-five cents, in addition to those provided by existing circulars, will be paid on all anthracite coal shipped *via* Schuylkill Canal, or from Port Richmond to the harbor of New York, or through the Delaware and Raritan Canal. FRANKLIN B. GOWEN, President."

The Philadelphia *Ledger* of August 5th, in speaking of the business for August, says:

"It is not improbable that the Reading will have to come into the market as a buyer of coal to fill its orders. * * *

"The actual difference heretofore prevailing in favor of the Lehigh region, due to the very moderate rate of tolls charged by the Lehigh Valley Railroad Company, was as follows, calculating in all cases the entire charges from the breaker to the wharf in New York City: *Lehigh Region*—All sizes, $1.95. *Schuylkill Region*—Railroad, stove coal, $2.65; other sizes, $2.45; canal, stove coal, $2.70; other sizes, $2.55. The effect of which was, that by selling coal in New York at the same price, the Schuylkill operator realized at the breaker from 50 to 75 cents less than was received by the Lehigh operator. While the allowance of 35 cents is not sufficient to overcome the entire difference, it will yet permit some Schuylkill coal to go into the New York market, and, as the Schuylkill operators have advantages over the Lehigh in the rates of tolls and charges to Philadelphia and the East, the probability is that the new rate of tolls will be considered satisfactory by those who up to this time have been pretty loud in their expressions of dissatisfaction with the Reading Railroad Company for maintaining a rate so much higher than that of the Lehigh Valley Railroad."

It is said that the Reading Company was anxious that the August allotment should be 2,500,000 tons, instead of 2,000,000 tons, as determined upon by the Board of Control.

There are some marked inconsistencies between the action of the Reading Company and the reports of the *Ledger*. If the company is likely to be compelled to enter the markets as a purchaser of coal, why should it bother about the New York market? If the Coal and Iron Co. should have a market elsewhere, the individual operators should also, and the railroad company would receive 35c. per ton more on the coal carried. It is argued that the Lehigh Valley R. R. Co. enters the Schuylkill Region by its Mahanoy Branch, and that by low rates of freight it has been encroaching upon the business of the Reading Company. If so, what difference does it make if the Reading Company is able to procure and dispose of more coal than it is permitted to carry under the rulings of the combination? The facts carry out the belief that the Philadelphia trade is not so good as it has been represented, or that the outlook is by no means as encouraging as it has been customary for Philadelphians to lead us to suppose.

It is claimed that the object of this action was to equalize matters with the Lehigh Valley Railroad Company. This, however, is not the only company that enters the New York market, and what does it do to the others? If the Schuylkill operators are to be put upon an equal basis in the New York market with the Lehigh region proper, they will hold a position excelled by none. For they will have practically no competition in the Philadelphia market, and but little in New York that can not be met. This drawback clearly indicates what we have all along believed, that the Eastern markets are very full. But little help can be given the Schuylkill operators in the New York market; for the business is entirely too small for those competing for it now, and further offerings of coal can only result in lowering prices. We refer to our Philadelphia correspondence, which reviews the situation, and thinks that the action of the Reading Company was not intended as a blow at the combination. We have investigated the subject very closely, and are unable to detect any ill feeling on the part of the other large companies. It is simply the outgrowth of the inability to realize under a combination the sanguine expectations of the President of the company.

The dullness of trade has been intensified by the action of the Reading Company. Where a fair business was expected, we now find it as quiet as at almost any time this year. It is so light as to hardly determine prices. We are, however, unable to learn of an actual change, although there is unquestionably an inclination to weakness. The light demand for domestic uses would have left most of the yards fairly full, while the constant offerings of coal at a "bargain" have induced many dealers to continually carry all of the coal their yards would hold. The manufacturing interests continue very quiet, and are not consuming nearly as much coal as was expected.

The production of anthracite coal last week was 291,253 tons, as against 469,918 tons the previous week, and 258,019 tons the corresponding week of 1877. The total production from January 1st to August 3d was 8,737,486 tons, as compared with 11,386,075 tons for the like period of last year, showing a falling off this year of 2,648,589.

Bituminous.

This branch of the coal trade continues very quiet, but there is still a liberal quantity of coal being shipped on account of orders given earlier in the year. The Cumberland region is ahead of shipments to the corresponding period of last year over 95,000 tons, and, although we are unable to make the latest comparison with Clearfield, yet it is very probable that that district has about caught up. Very little bustle has been made in doing the business of this year, yet the showing, under the circumstances, is quite creditable. Prices continue very low, and, in most instances, unsatisfactory to the producers.

New York.

Wholesale Prices of Anthracite Coal for August Delivery f. o. b. at Tide Water Shipping Ports, per ton of 2240 lbs.

	Lump.	Steamer.	Grate.	Egg.	Stove.	Chestnut.
WYOMING COAL.	$	$	$	$	$	$
Lackawana, at Weehawken	3 60	3 60	3 60	3 75	4 20	3 60
*Pittston, at Newburg.....	3 45	3 45	3 45	3 60	4 05	3 50
L. Val. Coal Co., at Amboy.	.....	3 75	3 50	3 60	4 10	3 50
Kingston at Hoboken.....	3 50	3 50	3 60	3 75	4 20	3 50
Old Co.'s at Port Johnson..	4 40	.....	4 05	4 05	4 20	3 60
Lehigh Coal Exchange.....	4 10	.....	3 90	3 90	4 10	3 50
Wilkes-Barre at Pt. Johnson	3 60	3 60	3 60	3 75	4 20	3 60
Plymouth Red Ash at Port Johnson.....	.....	.....	3 60	3 75	4 30	3 70
Swoyers at Eliz. Pt. or S.A...	3 75	3 75	3 60	3 75	4 20	3 60
LEHIGH COAL.						
L. V. Coal Co., at P. Amboy.	4 10	.....	3 90	3 90	4 10	3 50
Cross Creek, at Port John.	4 00	3 90	3 90	3 90	4 20	3 60
Buck Mount. Vein at Elizabeth Port o S. A.....	4 25	4 00	3 90	4 10	4 25	3 60
SCHUYLKILL COAL *At Pt. Richmond, Phila.*						
Hard White Ash.	3 30	3 30	3 30	3 45	3 85	3 35
Free-burning W. Ash. ...,	.....	.....	3 25	3 40	3 85	3 25
Schuylkill Red Ash.....	.....	.....	.....	3 70	3 85	3 25
Lorberry.....	...,	.....	3 70	3 85	3 85	3 35
Lykens Valley Vein.....	.....	.....	3 70	3 95	3 95	3 55
†*Alongside in N.Y. Harbor.*						
Hard White Ash	4 10	4 10	4 10	4 10	4 40	3 80
Free-burning W. Ash.....	.....	.....	3 80	3 95	4 40	3 80
Schuylkill Red Ash.....	.....	.....	.....	4 35	4 50	3 90
Lorberry.....	.....	.....	.....	4 60	4 60	4 25
Lykens Valley Vein.....	.....	.....	4 60	4 70	4 70	4 35

* Fifty cents per ton additional for delivery in New York.

† On coal delivered f. o. b. at the Philadelphia and Reading Coal and Iron Co.'s Wharf at Williamsburgh, the current date of harbor freight will be allowed from the prices here given.

Wholesale Prices of Bituminous Coal.

DOMESTIC GAS COALS.

Per ton of 2240 lb.	At the Shipping Ports.	Along side in New York.
Westmoreland and Penn.....	$4 25	.....
At Greenwich, Philadelphia		$5 50
At S. Amboy.....	5 00	5 50
Kanawha at Richmond	4 10	5 40
Red Bank Cannel, Pa., at Philadelphia..	8 00	8 50
Youghiogheny, Waverly Co., at Balt ...	4 00	5 65
Despard, West Va.....	4 50	6 00
Murphy Run, West Va., at Baltimore. ..	3 75	5 85
Fairmount, West Va., " " ...	3 75	5 70
Newburg Orrel. Md. " " ...	3 75	6 00
Cannelton Cannel, West Va		10 00
" Splint " at Richmond.	6 00	7 00
" Gas Coal at Richmond	4 00	5 65
Peytona Cannel, W. Va.. at Richmond...		10 00

MANUFACTURING AND STEAM COALS.

Cumberland at Georgetown and Alexandria	2 75@2 90	4 35@4 50
Cumberland, at Baltimore.....	2 90@3 00	4 35@4 50
Cl'rfi'd "Eureka" and "Franklin."		
At mines.....	0 75	....
At Baltimore.....	3 25	4 50
At Philadelphia.....	3 25	4 50

FOREIGN GAS COALS.

	Sterling.	Am. cur'ncy
Newcastle, at Newcastle-on Tyne.....	7s.6d.	$2 50@ $3 50
Liv. House Orrel, at Liv.....	25s.	13 00
Ince Hall Cannel " ....,	35s.6d.	18 00
" Gas Cannel "	25s.6d.	10 00@ 10 50
Scotch Gas Cannel, at Glasgow, nominal.....	25s.	7 50
	Gold.	
Bl'k House, at Cow Bay, N.S.	$1 75	$4 50
Caledonia, at Pt. Caledonia.	1 50	4 25
Glace Bay at Glace Bay....	1 50	4 00
Lingan, at Lingan Bay.....	1 50	....
Intern'l Mines, at Sydney...	1 75	4 50
Pictou, Vale Mines, at Pictou	2 00	4 70

Retail Prices.

Per ton of 2000 lbs.

Anthracite.

	G. & Egg.	Stove	Chest.
Pittston coal delivered.....	$5 00	$5 00	$5 00
Lack. coal, delivered below 59th St.	4 50	4 75	4 50

Bituminous.

Liv. House Orrel.....	$18 00	American Orrel.....	$11 00
Liv. House Cannel...	18 00	Red Bank Cannel.....	7 00
Am. "	11 00	Cumberland.. ..	9 00
Ca'n'lt'n Bl'k, or splint.	10 00		

Boston. August 3, 1878.

The local market continues very quiet, notwithstanding the predictions of higher prices which are made in numerous directions. The contract for furnishing the govern-

ment with coal for the post-office, custom-house, and court-house in this city has been awarded to Austin C. Wellington for $6873.50. The contract embraces about 1300 tons of coal. The bids were as follows: A. C. Wellington, $6873.50; Shepard Robbins, $6906; Charles A. Campbell, $7240; Joseph A. Wellington & Co., $7481.90; L. G. Burnham & Co., $7912; H. B. Emerson, $8295.

We quote Boston wholesale prices as follows:

Anthracite, broken	$4.55	Caledonia	$4.00
" egg	4.80	Newcastle	4.00
" stove	5.00	Cannel, English	18.00
Franklin	5.75	" Library	15.00
Cumberland	4.50	" Buckeye	11.00
Clearfield	4 50	Penn	5.25
Westmoreland	5.25	Youghiogheny	5.25

—*Commercial Bulletin*

Baltimore. August 6, 1878.

[Specially reported.]

Wholesale Prices per ton of 2240 lbs.

In cars at Depot N. C. R. R.

HARD WHITE ASH, FREE-BURNING WHITE ASH, SHAMOKIN, ETC.

Lump and Steamboat	$3.85	Stove	$4.25
Broken	3.85	Chestnut	3.80
Egg	4.00		

LYKENS VALLEY RED ASH.

Broken	$4.15	Stove	$4.45
Egg	4.30	Chestnut	3.90

From wharf or yard to the trade, 50c. per ton additional.

Afloat by cargo per canal barge, 15c. per ton less than in cars at depot.

Buffalo. August 5, 1878.

[Specially reported by E. L. Hedstrom.]

Until further notice, the following will be the prices for Scranton, Wyoming, Lehigh, and Blossburg coals, per ton of 2000 pounds, delivered free on board vessels at Buffalo N. Y.:

	Lump.	Grate.	Egg.	Stove.	Nut.
Scranton	....	$4.30	$4.40	$4.65	$4.15
Wyoming	....	4.30	4.40	4.65	4.15
Lehigh (Sugar Loaf)	....	....	....	....	....

Blossburg, $3.75, F. O. B.

[Specially reported by C. M. Underhill.]

The Scranton, Wilkes-Barre, Plymouth, Shamokin, and Delaware and Hudson (Lackawanna) coals are offered for the present at the following prices per ton of 2000 lbs.:

	Delivered at			
	Elmira.	Ithaca.	Syracuse	Rochester.
	Afloat.	Afloat.	Afloat.	Afloat.
Lump	....	....	....	....
Grate	$3.50	$3.35	$3.35	$3.60
Egg	3.60	3.45	3.45	3.70
Stove	3.70	3.70	3.70	3.95
Nut	3.60	3.60	3.35	3.60

	Delivered at				
	Oswego.	Erie.	Buffalo.		
	F. O. B.	F. O. B.	Afloat.	F. O. B.	Ret. Del.
Lump	....	....	....	....	....
Grate	$3.80	$4.30	$3.90	$4.30	$4.90
Egg	3.90	4.40	4.00	4.40	5.00
Stove	4.15	4.65	4.25	4.65	5.25
Nut	3.65	4.15	3.75	4.15	4.75

Cost of coal from Erie, Oswego, Sodus Point or Charlotte for Western market, same as if shipped from Buffalo.

[Specially reported by Lee & Loomis.]

Connellville coke, gas, steam, and Cannel coals are offered, for the present, at the following prices per ton of 2000 lbs., delivered at Buffalo:

Per ton of 2000 lbs. delivered on cars.

	Lump.	Run of Mine.	Nut.	Slack.
Connellsville coke	$4.75	....	....	....
Brookfield Coal	3.50	....	....	....
Briar Hill	3.50	....	2.85	....
" " No. 2	....	3.15	....	....
Youghiogheny	4.00	....	....	....
Monterey	3.00	2.60	....	....
Catfish	3.00	2.60	....	1.70
Stoneboro	....	2.60	2.50	1.70
Sterling Cannel	4.50	....	....	....
Cameron	....	2.80	....	....
Hillside	....	....	....	....

Chicago, Ill. August 5, 1878.

[Specially reported by Messrs. Reno & Little.]

The following are the present prices of coal per ton of 2000 lbs. delivered:

Retail prices of coal delivered per ton of 2000 lbs

Lackawanna Stove	$6.25	Erie and Brier Hill	$5.00
" Chestnut	6.00	Wilm'gton & Ill.	$3 00@3.50
" Grate	6.00	Blossburg	5.50@6.00
" Egg	6.00	Piedmont	7.00

Stocks of all kinds of coal liberal. Trade dull.

Cincinnati, O. August 6, 1878.

[Specially reported by the Consolidated Coal & Mining Co.]

Per bushel of 72 lbs.

	Retail delivered.	Wholesale afloat.
Youghioghney	11c.	7½c.
Camden	9c.	5½c.
Cannel	17@18c.	13c.

Anthracite, delivered, $7@$8 per ton of 2,000 lbs.

Hamilton, Ont. August 6, 1878.

[Specially reported by H. Barnard.]

Retail prices delivered per ton of 2000 lbs.

Scr. or Wilkes-B. Grate.	$4.75	Lehigh Lump	$6.00
" " Egg	4.75	Brier Hill	5.00
" " Stove.	5.25	Massillon	4.50
" " Nut	4.75	Smithing	5.50

Indianapolis, Ind. August 6, 1878.

[Specially reported by Messrs. Cobb & Branham.]

WHOLESALE BITUMINOUS.

On board cars, per ton of 2000 lbs.

White River	None in market	Hocking Valley	4.20
Brazil Block	$2.10	Raymond City	3.40
Highland Grate	1.85	Youghiogheny	3.70
Indiana Cannel	3.65	Blossburg (smithing)	5.25
Peytona	5.70	Piedmont "	5.25

Per car, 12 tons.

Block coal, nut	$15.00	Block Slack	$12.00
Highland, "	14.00		

RETAIL BITUMINOUS.

Delivered per bushel of 70 lbs.

Raymond City	14c.	Block Nut, steam use	6c.
Brazil Block	10	" Slack, "	5
Highland Grate	9	Virginia Cannel	24
Block Nut, domestic use	10	Indiana Cannel	15
Highland Nut, " "	11	Youghiogheny	15
" " steam	8	Blossburg	24

GAS COKE.

Per bushel, measure containing 2888 cubic inches.

Retail, crushed	8c.	Wholesale, lump	6½c.
" lump	7	" crushed	7½

ANTHRACITE.

Per ton of 2000 lbs.

Wholesale on Cars.		*Retail delivered.*	
Wilkes-Barre, all sizes	$5 50	Wilkes-Barre, all sizes	$6.50
Lackawanna, "	5.75	Lackawanna, "	6.50
Lehigh "	6.75	Lehigh, "	7.50

Louisville, Ky. August 6, 1878.

[Specially reported by Messrs. Byrnes & Speed.]

Wholesale per bushel of 72 lbs.

Pittsburg	8c.	Raymond City	7c.
Ashland (Ky.)	6	Kentucky, on cars	7

Retail.

Pittsburg	11c.	City made Coke, per bsh	7c.
Raymond City	10	Soft Coke, per bushel	7c.
Ashland (Ky.)	9	Cannel Coal	17
Pittsburg Nut	10	Anthracite, per ton	$7 50

Milwaukee, Wis. August 6, 1878.

[Specially reported by Messrs. R. P. Elmore & Co.]

Retail price per ton of 2000 lbs.

Anthracite, Egg, and Chestnut	$5 50		
Stove size	6 50		
Lehigh lump	$6 50	Connellsville coke on	
Brier Hill	5 00	R. R. track	7 25
		Straitsville	4 80

Montreal. August 6, 1878.

[Specially reported by Messrs. Robert C. Adams & Co.]

Wholesale per 2240 lbs.

Scotch Steam	$4.00	Cape Breton Steam	$3.25
Pictou	3.60	Newcastle Smith's	5.00

Anthracite at retail, per 2000 lbs. delivered.

Stove	$6.00	Chestnut	$5.25
Egg	5.50		

New Orleans, La. August 1, 1878.

[Specially reported by Messrs. C. A. Miltenberger & Co.

The coal market continues weak; demand fair; stock large. Coal on hand August 1st: Pittsburg coal, 198 boats, 6 barges, and 4 French creeks; St. Bernard coal, 6 boats and 1 barge. Consumption during July: St. Bernard coal, 1 boat; Pittsburg coal, 30 boats, 5 barges, and 4 French creeks. Arrivals during July: 1 boat St. Bernard coal.

PITTSBURG COAL.

At wholesale (by boat-load)	27c	per bbl. of 180 lbs.	
To steamboats	45c.	"	"
" manufactories	45c.	"	"
" families	50c.	"	"
In hhds. (for shipment)	$5.00 per hhd. from 5 to 6 bbls.		

ANTHRACITE COAL

Per ton of 2000 lbs.

At wholesale	$7.00 to $8.00
To families etc	9 00 to 10.00

ST. BERNARD (KY.) COAL.

To steamboats	40c.	per bbl. of 180 lbs.	
" families	45c.	"	"
Virginia cannel to families	$1.00	"	"

Philadelphia. Aug. 8, 1878.

The Schuylkill region is now started for a campaign of four weeks, but some are already dropping out of the ranks, notwithstanding the scarcity of feed-water, which throws idle or cripples several collieries, notwithstanding a few local strikes (of no importance, however). After three days' work, it is made evident to all that the quota for August is too large. The trade has been made worse than it was by the absurd use made of the reduction of tolls on Schuylkill coal going through the Delaware and Raritan Canal, and which we propose to explain fully. That reduction ought to have been made long ago, or, better still, the rates of transportation to New York harbor should have been fixed in the spring, so that there would have been no need of a reduction at this time, and which is not one half of what it should be to equalize the rates for the Schuylkill and the Lehigh, as intended. We now copy from our communication of last April 25th, in your No. of April 27th:

The Schuylkil Region starts again next Monday, after a two weeks' stoppage. It is pretty much ruled out of the New York market. It costs $1 per ton more to put stove coal alongside at New York from Schuylkill Haven than it does from Mauch Chunk. It must either be the intention to keep the Schuylkill operators out of New York, or some very big blunder has been made. However, the difference between the Lehigh Valley Railroad, who seem to think it their interest to protect their customers, and the Reading, who believe that they will be benefited by killing them, is well marked. In the figures we give above, we are within the strictest limit of the facts, incredible as it may seem. The cost from Mauch Chunk to South Amboy is $1.17; from South Amboy to New York, 12 cents, towage, making $1.29. The minimum charge on stove to New York is $2.30, making $1.01; on Egg it is 10c. less, and on other sizes 15c., making the difference on the other sizes somewhat less, as the Lehigh has a uniform charge on all sizes, while the Reading discriminates.

This inequality has been kept on ever since, and previous to the allowance of 35 cents the figures on Stove Coal stood as follows:

Mauch Chunk to Perth Amboy	$1.25
Lighterage to New York	15 to 20
	$1.45
Minimum on Stove Coal from Schuylkill Haven to New York	$2.40

Showing 95c. to $1 against Schuylkill.

The argument has been used, and it is not without force, that the rates ought to be taken from the Breaker, and the lateral tolls averaging in the Lehigh about 20 cents more than in the Schuylkill, it reduces the difference on Stove Coal (the main size sent to New York by the Schuylkill Region) to 80 and 75 cents, which shows the concession not to cover one half of the difference.

The rates along the Delaware are also lower from the Lehigh Region than from the Schuylkill, and it is particularly the case with coal which can not reach its destination by Schuylkill boats—the rates to Port Richmond being 20 cents higher than the rates by canal from Mauch Chunk, to which must be added the lighterage from Richmond.

Your readers can fully understand now why after every meeting of the Board of Control both the Lehigh and Schuylkill operators have been dissatisfied with the quota agreed upon—the first complaining it was not large enough, the last it was too large. The field in which the producers of hard white ash Schuylkill were allowed to operate has been contracted, and the Lehigh producers assisted to an extent corresponding exactly to that contraction. The Schuylkill Region filled more rapidly than it would otherwise have done the markets they were allowed to reach, and to enable them to move now something has to be done; hence this tardy and ill-timed, half-way measure, which has been connected with a predicted disruption of the combination, although it has nothing to do with it, further than destroying a confidence badly shaken by the attempt to force the coal on the market farther than it is needed.

Freights remain at last quotations.

Pittston, Pa. August 6, 1878.

Pennsylvania Coal Company's Coal in Yard.

Retail per ton of 2,000 lb.

Lump, Egg, and Stove	$2 25
Chestnut	2 00
Pea	1 00

Delivered, 50 cents per ton additional.

Richmond, Va. August 6, 1878.

[Specially reported by S. H. Hawes, Dealer in Coal.]

Per ton of 2240 lbs. f.o.b.

Kanawha Cannel	$9.00	New River Bituminous	$3.30
Coalburg Splint	4.50	Clover Hill Coal	2.50
Lewiston "	4.50	Norwood Gas and	
Kanawha Gas Coal	4.10	Steam Coal	2.70

Sandusky, Ohio. August 6, 1878.

[Specially reported by Messrs. Black & Clarke, Agents Con. Coal and Mining Company.]

Per ton of 2000 lbs.

ANTHRACITE.

	Grate.	Egg.	Stove.	Chest
Lehigh	$6 00	$6 00	$6 25	$5 75
Wilkes-Barre	4 80	4 90	5 15	4 65
Pittston	4 80	4 90	5 15	4 65

BITUMINOUS.

Massillon	$2 85	Straitsville	$2 50
Hocking Valley	2 50	Piedmont	4 10

Prices retailed delivered 50c.@75c. above car prices.

St. Louis, Mo. August 6, 1878.

Reported by James J. Sylvester, Secretary of the Anthracite Coal Association.]

Retail prices, delivered. Ton of 2000 lbs.

ANTHRACITE.

	Per ton.		Per ton.
Lackawanna	$7.50@....	Lehigh	$8.50@....
Wilkes-Barre	7.50@....	Connells. Coke.	6.00@....
Schuylkill	7.50@....	Blossburg	7.75@....

July 31, 1878.

[Specially reported by Messrs. Lewis P. Harvey & Co.]

BITUMINOUS.

Big Muddy	$3.65	Piedmont	$7.25
Indiana Block	3.25	Pittsburg	4.35
Illinois Coals	2.25@2.50	Peytona	7.50
Blossburg	7.75	Lehigh Val. Ant.	7.50@8.00

San Francisco. August 1, 1878.

Coal.—Imports from January 1st to July 1st, 1878:

	Tons.		Tons.
Anthracite	5,765	Seattle	44,351
Australian	46,610	English	15,897
Coos Bay	16,410	Mt. Diablo	15,897
Cumberland	802	Rocky Mountain	371
Bellingham Bay	2,620	Ione	601
Vancouver Island	68,113	Carbondale	1,734

There is very little spot business doing, and for that little prices are so low and unprofitable that all interested prefer to keep details to themselves. Our gas companies make no change in the price of gas, although they are able to obtain coal at about one half the price heretofore paid for same, nor are local consumers able to buy foreign coal for household purposes any thing like as cheap as they ought to, considering the great decline in cargo rates. This, however, helps out all Pacific Coast mines that are more ready to cater to the popular voice of the people upon whom they are dependent. Imports during the week embrace the following cargoes: Antioch, 1000 tons Nanaimo; John Jay, 650 tons Seattle; Sierra Nevada, 1200 tons Wellington. These several kinds are favorites in the home market and go a good way to help out the local trade. The Wellington is very clean and compares favorably with the English West Hartley for family use. We quote Sydney cargoes on the spot and near by at $6 for good Steam. Wallsend may be quoted at $6@$6.25; Coast Coals, $5@$6 per ton. At this writing there are seventeen vessels due here from Australia with coal, now out sixty

days. The Eldorado, from Seattle, adds 1900 tons to our stock; and the bark Frank Austin a cargo of Wellington.—*Commercial Herald.*

Toledo, Ohio. August 6, 1878.

[Specially reported by Messrs. GOSLINE & BARBOUR.]

We quote the following prices for coal on cars at Toledo:

Ton of 2000 lbs.

	Grate.	Egg.	Chestnut.	Stove
Pittston	$4 80	$4 90	$4 65	$5 15
Wilkes-Barre	4 80	4 90	4 65	5 15
Lackawanna	4 80	4 90	4 65	5 15

Lehigh lump, $5.75.

Ton of 2000 lbs.

Straitsville lump	$2 60	Massillon nut	$2 40
" nut	2 25	Willow Bank lump	2 85
Shawnee lump	2 60	" nut	2 40
" nut	2 25	Cumberland	5 00
Hocking Valley lump	2 60	Blossburg	4 60
" nut	2 25	Morris Run	4 60
Massillon lump	2 85	Gas Coal	3 30

Retail prices, delivered in the city, are: Stove, $5.25; Grate, Egg, and Chestnut, $5.

FREIGHTS.

Coastwise Freights.

Per ton of 2240 lbs.

Representing the latest actual charters to August 8, 1878

PORTS.	From Philadelphia.	From Baltimore.	From Elizabethport, Port Johnson, South Amboy, Hoboken and Weehawken.
Alexandria, Va.	50		
Bangor, Me.	1.15		
Bath, Me.	1.10	1.25	75
Baltimore	40†		
Belfast			
Beverly, Mass.	1.10		80
Boston, Mass.	1.05@1.10	1.25@1.30	70
Bridgeport, Conn.		1.25	50
Bristol, R. I.	1.05		70
Brooklyn			
Cambridge, Mass.	1.25‡		70
Charleston	95		
Charlestown			
Danversport	1.15		
East Cambridge.	1.30		
Fall River	1.05	1.25	65
Georgetown, D.C.			
Hartford			
Hoboken			35
Jersey City			35
Lynn	1.20		
Marblehead	1.10		
Middletown			90
Nantucket, Mass.			90
New Bedford	1.00	1.25	70
Newburyport		1.40	90
New Haven		1.25	50
New London		1.25	60
Newport	1.05		65
New York	80@85†	1.20	35
Norfolk, Va	45		
Norwich			60
Norwalk, Conn			55
Pawtucket	1.15		
Philadelphia			
Plymouth			
Portland	95†	1.25	75
Portsmouth, N.H.		1.40	80
Portsmouth, Va.	50@55		
Providence	1.05	1.25	65
Provincetown			
Quincy Point	1.15		
Richmond, Va	50		
Rockland			
Rockport	1.25		
Saco			
Salem, Mass.	1.15	1.25	75
Salisbury	1.25‡		
Saugus			
Saybrook	1.05		
Savannah			
Somerset	1.00		
Staten Island	86†		
St. Johns, N. F.			
Washington	60		
Williamsburg	85†		

*And discharging and towing. † And discharging. ‡ And towing. § 3c. per bridge extra.

Lake Freights on Coal and Iron Ore.

Representing the latest actual charters up to August 6.

From	To	Rate per ton.	From	To	Rate per ton.
Ashtabula.	Milwauk'e.	30	Cleveland.	Chicago	40
"	Chicago	40	"	Milwaukee	35
"	Toronto.	80	"	Brockville.	$1.00
Bay City.	Chicago*	60	"	Milwaukee	40
Black Riv.	Chicago	40	Erie	Chicago	40
"	Milwaukee	40	Escanaba	Cleveland*	60
"	Toronto.	85	Fairport	Toronto.	85
Buffalo	Chicago	30	"	Toledo*	60
"	Milwaukee	30	Marquette	Chicago	1.20
"	Cleveland*	40	"	Cleveland*	1.00
"	Detroit	20	Oswego	Chicago	90
Charlotte.	Chicago.	80	"	Milwaukee	86
"	Milwaukee	65	"	Detroit.	45
Cleveland.	Toronto	85	Toledo	Toronto.	90

* Iron ore.

BUFFALO, August 1, 1878.

The schooner Portage, mentioned in our last issue lies in twenty-three feet of water, and will prove a total wreck. The amount of insurance on her cargo, if any, is not known.

CLEVELAND, August 2, 1878.

The barges Wetmore and Brunette are chartered to load coal from this place for Chicago at 35@40c. per ton. There is not much coal to come forward at present, nor are there many vessels offering.

Ocean Freights.

Ocean Freights on coal, iron, etc., per ton of 2000 lbs., to and from foreign and domestic ports, for four weeks, ending August 9, 1878, are given below.

DATE.	From	To	Cargo.	R'te
July 14	Philadelphia	Halifax, N. S.	Coal	1.60
" 14	Philadelphia	Yarmouth, N.S.	Coal	1.40
" 14	Glace Bay	Havana	Coal	3.50
" 18	New York	St. Johns, N. B.	Coal	2.60
" 23	Perth Amboy	St. Johns, N. B.	Coal	1.00
" 27	New York	Halifax, N. S.	Coal	1.50
" 31	Philadelphia	St. Thomas	Coal	3.50
" 31	New York	Nassau	Coal	2.00
Aug. 6	Baltimore	Aspinwall	Coal	5.00
" 7	Philadelphia	Cienfuegos	Coal	5.87
" 7	Bilboa	Philadelphia	Iron ore	2.45

Rates of Freight on Anthracite Coal to Tide-Water Ports.

SCHUYLKILL COALS. Per ton of 2,240 lb.	From *Pine Grove.	From *Tamaqua.	From *Schuylkill Haven.	From Port Clinton.
To *Port Richmond*, via P. & R. R. R., Main Line, for shipment	1.95	1.90	1.75	.....
To *Harrisburg*, via Lebanon Valley Branch	1.29	1.85	1.70	.....
To *Allentown*, via East Pennsylvania Branch	1.59	1.74	1.59	.....
To *Lancaster*, and Points on Lancaster Branch, via R. & C. R. R.	1.71	1.66	1.51	.....
To *Dauphin*, via Schuylkill and Susquehanna Branch	1.09	1.52	1.37	.....
To *Slatedale Junction*, via Berks and Lehigh ranch	1.74	1.69	1.54	.....
To *Lebanon*, via Lebanon and Tremont Branch	98	.....	.....	.....
To *Philadelphia*, via Schuylkill Canal, including freight and charges for the use of cars and barges, and for tolls (exclusive of cost of loading, trimming and unloading)	.....	.....	1.65	1.55
To *New York*, via Schuylkill Canal, including freight and charges for the use of cars and barges and tolls on the Schuylkill Canal and Delaware & Raritan Canal and the towing between Fairmount and Bordentown and between New Brunswick and New York (exclusive of cost of loading, trimming and unloading)	.....	.....	2.50	2.40

From *Tamanend*† to *Catawissa, McAuley, Mainville, Rupert* and *Danville*, via Catawissa & Williamsport Branch Railroad 100

From *Tamanend*† to *Williamsport, Hall's* and *Montoursville*, via Catawissa & Williamsport Branch Railroad 135

*For shipment via Main Road or Schuylkill Canal, one and one-half cents per ton per mile, and two cents per ton additional to Schuylkill Haven, Pine Grove, Tamaqua or Port Clinton, for Canal, as the case may be. Provided no charge shall be less that 15 cents, or greater than 45 cents per ton

† Coal sent to points on the Catawissa and Williamsport branch will be charged one and one half cents per ton per mile, and two cents per ton additional to Tamanend.

A deduction of 20 per cent will be made from the above rates upon all coal consigned for actual consumption at iron works upon the line of the railroad, any of its branches, or the Schuylkill Canal.

An additional charge of 25 cents per ton will be made on chestnut and pea coal to whatever points consigned. If the shipper signs a release of all demands arising from a deficiency of weight at the place of destination, and agrees to indemnify the company from all claims by reason thereof, such additional charge will not be made. Releases, properly prepared, will be furnished, and can be signed at the coal offices of the company, at St. Clair, Palo Alto, Schuylkill Haven, Mount Carbon, Pine Grove, and Tamaqua.

For consumption at local points in coal region, including Shamokin, Herndon, Schuylkill Haven, Pine Grove, and Tamaqua, three cents per ton per mile, and two cents per ton additional; and a charge for *car service* of fifteen cents per ton when in Philadelphia and Reading Railroad cars, provided no charge, including freight tolls and car service, shall be less than twenty-five cents per ton. If the coal is for manufacturers, the rate will be two cents per ton per mile, and two cents per ton additional; and a charge for car service of five cents per ton when in Philadelphia and Reading Railroad cars. Provided no charge, including freight, tolls, and car service, shall be less than fifteen cents per ton.

Sent westward via Northern Central Railway (in N. C. R W. Co.'s cars), four and two tenths cents per ton per mile, to Locust Gap, Shamokin, or Herndon, provided no charge will be made less than fifteen cents per ton.

One mile extra will be added for coal passing through the East Mahanoy Tunnel.

Fractions of distances and rates will always be stated in *tenths*.

No charge will be made for weighing or making returns of coal shipped, and the latter will be furnished free of charge upon application to the weighmaster; if these returns are to be sent by mail, envelopes properly stamped and addressed, must be furnished to the weighmasters.

All coal will be charged the rates (both lateral and main line) current on the day it is weighed; it will also be waybilled on the same day.

IRON MARKET REVIEW.

NEW YORK, Friday Evening, Aug. 9, 1878

American Pig.—The business of the past week has been but a repetition of many previous weeks. There have been a few hundred tons of pig-iron sold, among which were 200 tons of a Schuylkill brand, at a private price, said to be very low. Stocks are steadily accumulating, and there do not appear to be any pressing wants for consumption. There is no change in the outlook, there being no indications of a business in the early future that will do any thing to strengthen prices. We quote No. 1 foundry at $16.50@$18; No. 2 foundry, $15.50@$17; and forged, $14.50@$16.

Scotch Pig.—About 100 tons of Eglinton reported sold in lots on private terms. We quote Eglinton at $21.50@$22; Coltness, $23@$24, and Glengarnock, $23.

Rails.—There has been no business reported since our last. There is said to be a fair inquiry for both steel and iron rails. We quote the former at $41.50@$44 and the latter at $32@$36.

Old Rails.—A sale of 150 tons on private terms is reported. We quote at $17@$18.

Wrought Scrap.—Without business. We quote nominally at $20@21.

Baltimore. August 5, 1878.

[Specially reported by Messrs. R. C. HOFFMAN & Co.]

Below we quote you present prices for pig-iron and blooms. Demand light.

Balt. Char.	$26.00@$28.00	M. & White	$13.00@$14.00
Va. "	26.00@ 28.00	C'lC.B.Blooms	50.00@ 52.00
Anth.No.1	19.00@ 20.00	" " Billetts	52.00@ 55.00
" " 2	18.00@ 19.00	Refi'd Blooms	43.00@ 45.00
" " 3	16.00@ 17.00		

Buffalo. August 6, 1878.

[Specially reported by Messrs. PALEN & BURNS.]

	4 mos
No. 1 Foundry	$17.50
No. 2 "	16.50
Mill	15.00
Silver Gray	16.00
American Scotch A 1	18.00
" " B 1	17.00
" " No. 2	16.50

Chattanooga. August 6, 1878.

[Specially reported by J. F. JAMES, Dealer in Iron & Metals.]

The often-reported dullness prevails in the pig-metal branch of the trade. Demand is very light, and shipments are limited to supply immediate requirements only. Some iron-furnace superintendents are feeling a shade better, in anticipation of a slight improvement in the fall trade, but the outlook, to those well posted, is any thing but encouraging. The recent sales in Philadelphia, New York and Pittsburg, at the figures stated, $2 to $2.50 below actual cost, indicate stagnation all round. Bar iron and rail mills running full time, with fair supply of orders.

Tenn., Ala. & Ga. Charcoal, No. 1 Foundry	$16 00@$17 00		
Tenn., Ala. & Ga. Charcoal, No. 2 Foundry	15 00@ 16 00		
Tenn., Ala. & Ga. Charcoal, Gray Forge	13 00@ 15 00		
Tenn., Ala. & Ga. Coke, No. 1 Foundry	18 00@ 19 00		
Tenn., Ala. & Ga. Coke, No. 2 Foundry	16 00@ 17 00		
Tenn., Ala. & Ga. Coke, Gray Forge	14 00@ 15 00		
Charcoal or Coke, white and mottled	13 00@		
Old rails	$18 00@$19 00	Wr'ght scrap, No. 2	$11 00
Old car wh'ls.	16 00@ 17 00	Cast scrap	10 00
Wr'ght scrap, No. 1	16 00	Muck bar	30 00@ 32 00

IRON ORES.

Red hematite or fossiliferous f. o. c. at mines, about 55 per cent metallic iron	$1.25
Brown hematite about 55 per cent metallic iron	1.75

Cincinnati, O. August 6, 1878.

[Specially reported by Messrs. TRABER & AUBERY, Commission Merchants for the sale of pig iron, blooms, ore, etc.]

Below please find closing quotations of our pig-iron market, viz.:

CHARCOAL.

H'n'g Rock	No. 1 Foundry & B 1	$21 00@$22 50	—4 mos.
"	No. 2 "	20 00@ 21 00	—4 mos.
"	Soft Silver Gray	19 00@ 20 00	—4 mos.
"	Mill	18 00@ 19 00	—4 mos.
Tennessee	No. 1 Foundry	20 00@ 21 00	—4 mos.
"	No. 2 "	19 00@ 20 00	—4 mos.
"	Mill	18 00@ 19 00	—4 mos.

STONE COAL.

Ohio	No. 1 Foundry	$17 00@	—4 mos.
"	No. 2 "	16 00@	—4 mos.
"	No. 3 "	15 00@	—4 mos.
"	No. 4 "	14 00@	—4 mos.
"	Mill	16 00@	—4 mos.

COKE.

Ohio & W. Va.	No. 1 Foundry	18 00@ 19 00	—4 mos.
" "	No. 2 "	17 00@	—4 mos.
" "	Stove	16 00@	—4 mos.
" "	Mill	16 00@ 17 00	—4 mos.

CAR-WHEEL.

H'n'g R., C. B.	Hecla, Vesuvius, Etna, Buckhorn, Jefferson.	$30 00@ 35 00	—4 mos.
Maryland,	Cedar Point	35 00@	—4 mos
Missouri,	Maramec	28 00@	—4 mos

BLOOMS.

Charcoal	$45 00@$50 00—cash

SCRAP IRON.

Cast	40c. @ 45c.—cash.
Wrought	62½c.@ $1.00—cash

Columbus, Ohio. August 6, 1878.

[Specially reported by Messrs. KING, GILBERT & WARNER, Dealers in Pig Iron and Ores.]

There has been an improved demand for pig-iron during the week, and the indications all point to a good trade this

fall. The conviction seems to be gaining ground that pig-iron is not bad stock to have at present prices. A stiffening in prices is looked for during the present month.

The usual time, four months, allowed on quotations.

FOUNDRY IRONS.

No. 1 Hanging Rock Charcoal	$22 00@$22 50
No. 2 " "	@
No. 1 Hocking Valley soft and strong from pure limestone ores	18 00@ 18 50
No. 2 Hocking Valley soft and strong from pure limestone ores	17 00@ 17 50
No. 1 American Scotch	18 00@ 18 50
No. 1 Moxahala	18 00@ 18 50
No. 2 "	17 00@ 17 50
No. 1 Shawnee	18 00@ 18 50
No. 1 Eliza (Jackson County)	18 00@ 18 50
Silver Gray	16 50@ 17 00

MILL IRONS.

Gray neutral	16 00@ 17 00
Mottled and white neutral	15 50@ 16 00
Gray cold short	16 00@ 16 50
Mottled and white cold short	15 00@ 15 50

Cleveland, O. August 6, 1878.

[Specially reported by Messrs. C. E. Bingham & Co.]

Per gross ton, on four months' time. Subject to change without notice.

FOUNDRY IRON.

No. 1 L. S. Charcoal	$24 00	Am. S., No. 1, Ch. Val.	$22 00
No. 2 " "	24 00	" " B—1, " "	21 00
No. 1 Anthracite	21 00	" " No. 2 " "	19 00
No. 2 "	19 00	No. 1, Massillon	22 00
No. 1 Bituminous	21 00	B—1, "	21 00
No. 2 "	19 00	No. 2, "	20 00

CAR-WHEEL AND MALLEABLE IRON.

No. 3, L. S. Charcoal	$25 00	Nos. 5 & 6, L. S. Char.	$25 00
No 4, " "	25 00		

BESSEMER IRON.

Nos. 1 & 2, L. S. Char	$24 00

FORGE IRON.

No. 1, Gray	$18 00	White and Mottled	$17 00

Iron Ores.

Red Hematite (about 55 per cent. metallic iron) f. o. c. at mines	$1 25
Brown Hematite (about 55 per cent. metallic iron)	1 75

Louisville, Ky. August 6, 1878.

[Specially reported by Messrs. George H. Hull & Co.]

There is more inquiry for iron, but the wide difference in the views of buyers and sellers has prevented any considerable increase in sales. Consumers have still expected further concessions on each purchase, but the needy holders are pretty well sold out, and furnace men are either holding firm at last month's prices or asking some advance. Which will ultimately yield is uncertain, but the state of affairs noted looks favorable to the producers, as we have not seen so much firmness on their part for a long time.

The usual time, 4 months, allowed on quotations below:

FOUNDRY IRONS.

	No. 1.	No. 2.
Hanging Rock Charcoal	$20 00@$21 00	$18 00@$19 00
Southern Charcoal	18 00@ 19 00	16 00@ 17 00
H'n'g Rock, Stc'l & Coke	19 00@ 20 00	17 00@ 18 00
Southern Stonecoal & Coke	17 00@ 18 00	16 00@ 17 00

"Amer. Scotch"... $17@$19 | Silver Gray... $15@$17.00

MILL IRONS.

No. 1 Charcoal, Cold-short & Neutral	$16 00@$16 50
No. 1 Stc'l & Coke, Cold-short & Neutral	16 00@ 16 50
No. 2 Stc'l & Coke, Cold-short & Neutral	15 50@ 16 00
No. 1 Missouri and Indiana, Red-short	20 00@ 21 00
White & Mottled, Cold-short & Neutral	13 00@ 14 00

CAR-WHEEL AND MALLEABLE IRONS.

Hanging Rock, Cold Blast	$28 00@$30 00
Alabama and Georgia, Cold Blast	26 00@ 28 00
Kentucky, Cold Blast	24 00@ 26 00

Milwaukee, Wis. August 6, 1878.

[Specially reported by Messrs. R. P. Elmore & Co.]

CHARCOAL IRON.

No. 1 Lake Superior per gross ton	$23 00—4 mos.
" 2 " " " "	22 00—4 mos.

ANTHRACITE IRON.

No. 1 Anthracite per gross ton	23 00—4 mos.
" 2 " " " "	22 00—4 mos.

STONE COAL AND COKE.

Warner's Am Sc'th (Bk. Band, per ton	$24 00@ ....—4 mos.
Soft Silvery per ton	21 00@ ....—4 mos.
Ohio Stone Coal	22 00@ ....—4 mos.

CAR WHEEL.

Lake Superior ores per ton	$24 00@25 00—4 mos

Philadelphia, Pa. August 8, 1878.

[Specially reported by Justice Cox, Jr., & Co., Iron Merchants, 333 Walnut street, Philadelphia.]

Pig Iron.—The demand for pig metal continues exceeding light and only known brands are moving at quoted prices. Outside brands can hardly be sold at any price. We quote No. 1 $17.50 to $19, No. 2, $16 to $17, No. 3 or Gray Forge, $15 to $17, all Philadelphia.

Manufactured Iron.—Bars continue about as dull as for several months. Only small lots for immediate consumption are ordered at this time. In plate and tank the orders are a little more plentiful, but nothing large is reported. The demand for skelp is exceedingly light. Most mills run on tube and pipe are either shut down, or only running on small orders. We quote bars 1 7-10 to 2c., as to quality; plate and tank 2⅞ to 6c.; skelp 1 9-10 to 2 1-10c. per lb.

Rails.—Nothing new is reported in steel rails. The mills are full—on old orders. We quote $42 to $44. In iron rails things are moving slowly; most mills fairly busy. We quote $32 to $35, all at mills.

Old Rails.—The market for old rails remains as reported. Market heavy, with few sales. We quote $18.50 to $19.50, as to quality.

Scrap.—Wrought is quoted $20 to $22; cast, $12 to $16. Market dull.

Old Wheels are quoted $17.50 to $18.

Pittsburg, Pa. August 6, 1878.

[Specially reported by A. H. Childs.]

	4 mos.		4 mos.
No. 1 F'dry	$19.00@$20.00	M. & White	$15.00@$16.00
No. 2 "	18.00@ 19.00	Hot Blast Ch.	20.00@ 23.00
Gray Forge	16.50@ 19.00	Cold Blast W.	35.00@ 37.00

Richmond, Va. August 6, 1878.

[Specially reported by Asa Snyder, Esq.]

There is now a firmer market, with liberal sales at quotations. Old rails and foundry irons are more especially in demand.

Amer. Scotch Pig Iron	$22.00@$23.00
Anthracite " " No. 1	19.00@ 20.00
" " " No. 2	18.50@ 19.00
" " " No. 3	17.00@ 18.00
" " Mottled	15.00@ 16.00
Coke " No. 1	19.00@ 20.00
" " No. 2	18.00@ 19.00
Va. Cold Blast Charcoal Pig Iron, cold short	19.00@ 22.00
" " " " " neutral	27.00@ 29.00
" Warm " " " cold short	18.00@ 20.00
" " " " " mill	17 00@ 18 00
Old Rails	16.00@ 17.00
Wrought scrap No. 1	17.00@ 18.00
Cast scrap—Machinery	17.00@ .....
Richmond Refined Bar Iron	2.00@ 2.10
Horse-shoes	4.25@ 4.50
Mule-shoes	5.50@ ..
Old Dominion nails (standard size)	2.50 keg.

Freight by sail to New York, $1.60 for 2240 lbs.

St. Louis, Mo. August 6, 1878.

[Specially reported by Messrs. Spooner & Collins, Commission Agents for all kinds of Iron.]

There is no change to note in regard to the condition of our market since last week. Trade continues dull, and prices remain the same. We quote on four months' time:

COLD BLAST CHARCOAL—ALL NUMBERS.

Hanging Rock	$28@$33	Assorted Bar Iron	$1.75 rates.
Tennessee	25@ 30	No. 1 Wr'ght Scrap, 70c. cwt.	
Kentucky	25@ 30	Heavy cast "	60c. "
Missouri	25@ 30	Light " "	40c. "
Georgia	25@ 30	Old rails	$19 00@$20 00
Alabama	25@ 30	Old carwheels	17 00@ 18 00

	No. 1.	No. 2.	Mill.	White and Mottl'd
Missouri stone coal	$22 00	$21 00	$19 00	$17 00
" charcoal	20 00	19 00	18 00	16 00
Tennessee charcoal	20 50	19 00	17 50	16 00
Tenn. coke very soft and strong	20 00	19 00	17 00	15 00
Hanging Rock charcoal	24 00	23 00	21 00	20 00
" " cold short	23 00	21 00	20 00	.....
	ExNo.1	No. 1.	BNo.1.	No. 2.
Alice Hanging Roc': coke.	$23 00	$22 00	$21 00	$19 00
Moxahala Black Band ores	23 00	22 00	21 00	19 00

METALS.

New York, Friday Evening, Aug. 9, 1878.

The present week has given no further encouragement to the metal trade; in fact, it has had no encouraging features, while the previous week had a little life in at least one article.

A correspondent writing us from London, under date of July 26th, says:

"Business in metals is exceedingly dull and languid, there being no speculative inquiry, while consumers only purchase from hand to mouth. Values of our leading articles are now almost as low as in the early part of May, when England was on the brink of a war with Russia about the Eastern question; and, judging from the present appearances, there would seem to be little, if any, hope of a speedy revival. Although trade is so quiet, it is difficult to believe that such stagnation can be of much longer continuance; and prices are now at so low a level as to warrant the hope that an improvement can not be far distant."

RECEIPTS OF METALS AT NEW YORK FOR THE FOUR WEEKS ENDING AUGUST 8TH, AND YEAR FROM JANUARY 1ST, 1878.

	July 18.	July 25	Aug. 1.	Aug. 8.	Year from Jan. 1
Copper, bbls	818	820	626	*1,293	14,554
Copper, boxes	.....	.....	.....	....	113
Copper, cakes	183	11	659	660	10,856
Lead, pigs	4,141	6,575	6,423	7,680	204,614
Spelter, pieces	759	1,000	769	662	29,962
Quicksil'r, flasks	.....	100	.....	909	909

* August 5, 4000 lbs. copper. August 8, 4000 lbs. copper.

Gold Coin has been steady during the whole week at 100½.

Bullion.—The market for silver has been without special feature either here or abroad, with the exception of a decline in London on Wednesday, owing to lower rates for India Council bills. It is quite impossible to forecast the early future of the market. If the French Government should not in its consideration of the silver question, which is now going on, make any change in its present policy, silver may be expected to advance a little within a month or two. We quote silver in London at 52⅝d.; in New York, 114⅝, and San Francisco, 10 per cent discount.

Date.	London Pence.	N. Y. Cents.	Date.	London Pence.	N. Y. Cents.
August 3	52⅝	114¾	Aug. 7.	52 11-16	114¾
August 5	52 11-16	114¾	Aug. 8.	52 10-16	114¾
August 6	52¾	114¾	Aug. 9.	52 10-16	114⅝

BULLION SHIPMENTS.

We give below a statement showing the latest bullion shipments in addition to those announced in our issue of August 3d:

July 25, Star,	Nevada	$15,121.00
" 25, Modoc.	"	5,259.78
" 26, Leopard,	"	6,844.86
" 26, Tybo Cons,	"	13,928.90
" 30, Manhattan,	"	14,851.20
" 27, California,	"	183,637.78
" 27, Con. Virginia,	"	66,049.83
" 29, Independence,	"	8,000.00
" 24, Northern Belle,	"	16,267.13
— Indian Queen,	"	4,859.63
" 20, Signal,	Arizona	1,591.00
" 31, Hackberry,	"	14,000.00
" 27, McCracken,	"	25,955.21
" 27, Stonewall Jackson,	"	17,000.00
— Black Jack,	Idaho	6,404.02
" 22, Standard,	California	37,221.77
Aug. 1, Silver Reef:	Utah	20,031.08
July 29, Germania,	"	7,000.00
Aug. 1, Old Telegraph	"	3,200.00

Bullion Products of Pacific Coast Mines for Half a Year.—We are indebted to the *Stock Report* for the following: "The bullion yield of mines for the first half of the current year has been as follows:

1878.	Mines.	Product.
January	28	$4,849,800
February	30	4,661,700
March	34	4,928,400
April	25	4,161,400
May	40	3,285,300
June	36	2,550,200
Total		$24,436,800

"Nearly 40 per cent of the above was gold, and the remainder silver and lead, though there was not over $600,000 in lead, leaving over $14,000,000 for silver. The figures given above do not show the gross yield, as many companies have failed to report. Some very successful corporations do not want the results of their operations known."

Statement of the Nevada Bank.—The semi-annual statement of the Nevada Bank, of San Francisco, for June 29th, shows assets amounting to, $26,443,000, of which $10,833,200 was in coin and bullion, the amount of bullion and trade dollars being $3,163,500. A large portion of this bullion has since been converted into coin.

United States Assay Office—Business for July.—The following is the statement of business at the United States Assay Office at New York, for the month ending July 31st, 1878:

Deposits of gold	$1,455,000
Deposits of silver	1,347,000
Total deposits	$2,802,000
Transmitted to Mint of the U. S. at Philadelphia for coinage—gold	1,233,498

The Philadelphia Mint Coinage for July.—The monthly report of the Superintendent of the Philadelphia Mint, shows a total coinage for July of 1,135,100 pieces valued at $1,038,983, of which 1,038,000 pieces were silver dollars; 200, five-cent pieces: 200, three-cent pieces, and 96,700, one-cent pieces. No gold was coined at this mint during July.

Coinage at the United States Mints for July.—Coinage was executed at the United States mints, during the month of July, as follows: Of gold (double eagles), 89,000 pieces, with a value of $1,780,000; standard silver dollars, $1,847,000; minor coins—5-cent pieces, $10; 3-cent-pieces, $6, and 1-cent pieces, $967. The total number of pieces coined during the month was 2,033,100, and their value $3,627,983.

The Mint at Bordeaux, France.—A mint was established in Bordeaux in A.D. 864, reëstablished in 1455, reopened in 1795 and again in 1870. The coinage of silver was, from 1795 to 1848, 146,363,000 francs; 1848 to 1865, 30,000,000 francs; 1865 to 1870, closed; 1870 to 1875, 70,000,000 francs.

Popularity of Our Trade Dollar in China.—The English find that the American trade dollar has complete possession of the commercial field as a medium of exchange in China, and propose to open a new mint at Hong Kong, to coin a similar piece of English money. The cost of the new enterprise will be £50,000.

The Silver Question in England.—London, August 5.—In the House of Commons to-night Sir George Campbell, Liberal, asked whether, now that the United States had made silver a legal tender, the government would consider the possibility of establishing equivalent silver coinages in the great silver-using dependencies of the kingdom. He advocated an increase in the amount of the silver rupee coinage. Right Hon. Stephen Cave, Conservative, on behalf of the Government, deprecated these proposals. He said the bi-metallic standard was very inconvenient, and that the government's duties in regard to currency should be limited to the prevention of fraud.

London, August 6.—In the House of Commons last night Right Honorable Stephen Cave, Conservative, confirmed the report that the Government had decided to send a representative to the Paris Monetary Conference.

The San Francisco Mint.—The Superintendent of this mint gives notice that on and after August 1st the price paid for silver at that institution, in amounts of 10,000 ounces, or less, will be the equivalent of the London rate on the day of purchase, less one half cent per ounce fine, payable in standard silver dollars.

The Nevada Bank, of San Francisco, has subscribed for $1,050,000 of the four per cent United States loan, to be paid in standard dollars, the same being proceeds of silver recently sold and delivered at the San Francisco and Carson Mints.

Copper.—There has been but a very small business. Tennessee has sold in small lots at 15¾c., and Lake at 16@16⅛c. There is no indication of an improved business likely to take place before September, and not then without a further reduction in prices. The manufacturers of sheathing are having a war of prices which may result in a greater consumption after the market becomes more settled. The consumers of copper, are, as a rule, complaining very much of their business, while peace in Europe has brought about a greatly-reduced demand for cartridges.

Our latest London advices are dated July 30th, and say:

"Bars were a shade steadier to-day, and a moderate

business done, at better prices than could have been expected from the tone prevailing at the close of yesterday. Sales this afternoon were together about 200 tons, comprising G. O. B's, at £62 5s. and £62 10s., with long prompts; fair marks at £62 and £62 10s. for short and distant arrival; best brands at £62 10s. cash. We heard of nothing in common marks for cash, but there was rather a strong inquiry at £61, while holders spoke of £61 10s. and £61 15s. Public opinion seems to be veering round to the belief that the suspension of specie payments in Chili may, after all, not have the depressing effect on the price of metal, that was at first anticipated; and, for our own part, we should not be surprised to find, on receipt of the next charter telegram, that values in Valparaiso were about on a level with those now ruling on this side.

"Wallaroo cake is quoted at £73, Burra £70 10s."

Tin in Singapore is quoted at $18.25; in Penang, $17.90, with exchange, 3s. 11¼d. The price of Malacca tin in London to-day is £61. There has been but a light jobbing business done in this market. Straits is quoted at 13⅛c.; L. & F., 14@14⅛c. Refined, 14¼c., nominal; Banca, 17¼c., and Malacca, 14⅛c. bid, and 14¼c. asked. The general tone of the market is weak. Large arrivals are expected during the next sixty days. The shipments of tin from the Straits to the United States the last half of July were 100 tons. The shipments of tin from the Straits from January 1st to July 31st, 1877 and 1878 were as follows:

	1877. Tons.	1878. Tons.
To United States	2138	2339
To Great Britain	1782	2077

The stock of tin in London on August 1st was very large, being 10,100 tons, while that here is estimated at 500 tons. There have arrived during the week 1349 slabs of tin.

Tin Plates.—These are very quiet, and without change. We quote, per box, as follows: Charcoal tins, $5.75, and ternes, $5.37½; coke tins and ternes, $4.75.

Messrs. Robt. Crooks & Co., of Liverpool, under date of July 25th, says of tin and terne plates:

"Inquiries have been decidedly more numerous during the past week, but, so far, have not resulted in much business. Still, it is so generally felt that, with the disappearance of the invariably slackest period of the year, something of a demand will come that the market, though not quotably higher, is somewhat more firm in feeling."

Lead.—We are reported sales of about 400 tons of common lead at 3½c. which is still the market price. In this number of the JOURNAL we publish another letter from our correspondent who has visited Colorado with the express purpose of studying the production of lead in that State and its bearing upon the lead markets of the United States, and, in fact, of the world. He says that for the present the limit has been reached at which "lead can be produced with living wages for the miner," but that in the future the cost of mining and marketing may be reduced. Such being the case, it is but safe to predict that those who have mines and can not profitably produce lead at the ruling market price will speedily introduce those economies necessary to enable them to do so. Mines will have to be opened up under the advice of good mining engineers, and upon such a scale as to insure every possible economy, and proper pumping and hoisting machinery will have to be erected. If material awaits transportation, it can not be long, even in these times, until railroads will be built to transport it. We have heard the cry of "no further economies can be introduced" applied to many industries, and we have steadily seen reductions in cost surpassing the expectations of those who expected the most. The success of the lead industry, like that of some other branches of trade, is dependent in the future upon the employment of brains, and not mere brute force. We have seen evidences of mines and furnaces worked by skilled engineers operated successfully, while those about them were losing money. It is being done to-day, and can be continued in the future. There is but one thing that may check the production of lead, and that is the inability to induce capitalists to invest a sufficient amount of money to open up the mines properly, erect suitable reduction works, and construct the necessary lines of transportation.

When we speak of introducing economies, we do not wish to be understood as meaning that the poor miner shall stand more than his share.

Lead, in connection with silver, can be produced largely and profitably in the West. And this will certainly enter as a very important element in the regulation of the lead market of the future.

Spelter and Zinc.—Spelter is quiet at 4⅛@5c. Sheet zinc is quoted at 5¾c.

Antimony.—With a fair inquiry, Cookson's is quoted at 11½c., and Hallett's 12½c.

Salt Lake Ore and Metal Market.

SALT LAKE CITY, Utah, August 9, 1878.

Argentiferous Lead (Base Bullion), $22 to $25 per ton for lead; $1.13 to $1.15 per ounce for silver; $20 per ounce for gold. The quotations for silver are based upon the silver in the lead of 80 to 120 ounces per ton of 2000 lbs.

The *Inter Ocean's* correspondent, under date of July 30th, says: "The bullion market continues depressed and inactive, with a nominal price of $1.13 per ounce for silver and $26 per ton for lead. The shipments of lead, ore, and bullion for the week ending July 27th were as follows: 24 cars bullion to Pittsburg; 5 cars bullion to Omaha; 7 cars lead ore to San Francisco; 5 cars lead ore to Hilliard. Bullion, 609,768 pounds; lead, 146,310 pounds; ore, 229,865 pounds. Total, 985,943 pounds."

Mr. J. B. Meader, under date of August 3d, 1878, reports the following shipments:

		Lbs.
Shipments of base bullion for July, 1878		1,905,133
Shipments of base bullion for six months		20,962,216
Total for seven months		22,867,349
Shipments of lead (Germania refined) in July	334,127	
Shipments of lead (Germania refined) previous	1,294,724	
		1,628,851
Ore shipments for July reduced to lead	92,227	
Ore shipments for six months	786,182	
		878,409
Total shipments of lead for seven months.		25,374,609
Same time for 1877		33,079,752
Decrease in 1878		7,705,143

FINANCIAL.

Miscellaneous Stocks and Quotations.

Sales and quotations of the stocks and bonds dealt in here, at Philadelphia and Baltimore for the week ending the 9th inst are given in the following tables. The Philadelphia quotations will have a * affixed. The Baltimore quotations are indicated thus †.

STOCKS.	Par value.	High'st	Lowest	Closing	Sales: Shares.
American Coal Co.	$25	... ..	.....	30	.....
St.L.,I.M.& S.R.Co..	100	.....	.....	5	100
Spring Mt. Coal Co.	50	.....	.....	50	.....
*Cambria Iron Co..	50	.....	.....	53	.....
*Penn.Salt Mf'g Co.	50	.....	.....	66	.....
*Westm'land C. Co.	50	....	.....	60	... ...
*Buck Mt. Coal Co..	50	.....	.....	35	... ...
*Schuyl. Nav. Co...	50	.....	.....	.....	.....
†B.&O.RR.Co.1st pf	.....	.....	.....	95	.....
†B.&O.RR.Co.2d pf	100	.....	.....	85	.....
" " " com	90	.....	.....	90	23
†George's C'k C. Co	100	.....	.....	86½	.....
†S. Clara M'g Co...	100	.....	.....	25c.	.....
†Atlantic Coal Co.	10	.....	.....	91c.	.....

BONDS.	Prine'l. When Due.	Int'est. When Due.	Hig'st.	Lowest	Amount.
D., L. & W., 7s, conv	1892	J. & D.	107	.....	1,000
" " " 2d mtge.	1881	M. & S.	.....	.....	.....
N.J.C.,1stmtge.new	1890	F. & A.	112½	.....	3,000
" " " 1st mtge.,con	1899	Q.	85	.....	1,000
" " " convt.....	1902	M. & N.	70	.....	*10,000
Lehigh & W. B., con	1899	Q.	58	.....	†11,000
Am. Dock & Imp. 7s	.....	J. & J.	50	.....	*4,000
St.L.I.M.& S..1st mt	1892	F. & A.	.....	104½	.....
Ches. & O., 1st mtge	1899	M. & N.	.....	27	.....
D & H C Co.,1stm.rg	1884	J. & J.	.....	99	.....
" " " " " "	1891	J. & J.	100	.....	6,000
" " " " m.loan cp	1894	A. & O.	103½	.....	6,000
" " " " " rg.	1894	A. & O.	103¼	.....	2,000
" " " " new mge.	.....	.....	.....	.....	.....
*L.V.R.,1stm.6s.cp.	1898	J. & D.	.....	109	.....
" " " rg.	1898	J. & D.	.....	110	.....
" " " 2d m. 7s,rg.	1910	M. & S.	.....	116	.....
" " " con.m.6s,rg	1823	J. & D.	100	99¾	4,000
" " " 6s cp.	1923	J. & D.	.....	.....	.....
*Pa.RR.,1st m.6s,cp	1880	J. & J.	104¼	.....	2,000
" " g. m., 6s, cp.	1910	J. & J.	107½	.....	1,000
" " " 6s, rg.	1910	A. & O.	109	108¾	7,000
" " con.m.6s,rg.	1905	Q.	.....	95¼	.....
" " " 6s, cp.	1905	J. & D.	.....	94½	.....
" " new loan, 5s	.....	.....	112½	112	7,000
*P.& R. R., 1st m.6s, R. C. 43-44.....	1880	J. & J.	.....	104	.....
P. & R. R., 1st m. 6s, R. C. 48-49.....	1880	J. & J	.....	.....	.....
P.& R. R.,2d m.7s cp	1893	A. & O.	.....	111	.....
" " " scrip....	1882	J. & J.	63	60	16,810
" " " in.m.7s,cp	1896	J. & D.	.....	.....	.....
" " " c.m.7s,cp.	1911	J. & D.	.....	105	.....
" " " 7s. rg.	1911	J. & D.	105	.....	5,000
" " " cvt.7s,R.C	1893	J. & J.	... ..	59	.....
" " C.& I.Co.,Deb 7s, R. C.....	1892	M. & S.	.....	.....	.....
& R.C.& I. Co., m. 7s, R. C.....	'92-3	various	.....	.....	.....
L. Nav. Co.,6s,rg.m.	1884	J. & Q.	.....	105½	.....
" " RR., rg. m.	1897	F. & Q.	104	.....	1,500
" " cvt. co. G. R.	1894	M. & S.	.....	91	.....
" " " Gold R. C.	1897	J. & D.	91	.....	1,000
" " con.m.7s,rg.	1911	J. & D.	.....	75	.....
*P.& N.Y.C.,7s,R.C.	1896 / 1906	J. & D.	.....	113	.....
*Pa Canal, 6s. cp..	1910	J. & J.	.....	.....	.....
*Schuyl.Nav.,1st m. 6s. rg.....	1897	M. & Q.	.....	.....	.....
*Sus.Coal, 6s, rg...	1911	J. & J.	.....	.....	.....
†Balt.&O. RR., 6s..	1880	J. & J.	.....	101	.....
" " " " 6s..	1885	A. & O.	.....	105	.....

Total transactions for the week..... $89,310

* Assented. † 10,000 assented at 45.

New York Stocks.

NEW YORK, Friday Evening, Aug. 9, 1878.

The week under review has been an active one for the coal stocks, although in the earlier portion the business was considerably disturbed by the announcement of a drawback of 35c. per ton on coal to be sent to New York harbor. The sales of Delaware and Hudson Canal aggregate 6825 shares at 53¾@50¼, closing at 50¾; Delaware, Lackawanna, and Western, 192,100 shares at 57¼@51½, closing at 52⅞; New Jersey Central, 9164 shares at 34@37⅝, closing at 34½.

Philadelphia Stocks.

PHILADELPHIA, Friday, August 9, 1878.

About 70,000 shares comprise the transactions in coal stocks at this market during the past week. Prices are decidedly lower, the quotations declining from 1 to 2½ per cent during the week. Lehigh Coal & Navigation Stock exhibits a gradual decline from 19¼ to 17 to-day, with very moderate transactions. In the stock of the Lehigh Valley the sales have amounted to 1700 shares, closing at 38¾ against 39⅛ last week. Pennsylvania R. R. stock closes at 31⅝, and Reading at 16¼. Sales of the former amount to 32,198 shares, and of the latter 34,525.

Gas Stocks.

NEW YORK, Friday Evening, August 9, 1878.

We are reported no transactions, the market remaining very depressed. The stock of the Brooklyn Gas Company has advanced from $143 to $145 per share bid. The Metropolitan Gas Company has declared a dividend of 3 per cent on the stock, and one of 3½ per cent on its certificates.

An Electrical Lightning Company.—In Paris many of the shop-keepers are introducing the electrical apparatus, making them as bright by night as by day. A company called the Société Générale d'Electricité, with a capital of 7,500,000 francs, has been lately formed, and proposes to supply this light to the citizens in the same way as the gas companies supply gas.

The Gas Question in San Francisco.—The *Stock Report* of the 1st inst. says: "The *Chronicle* this morning attempts to account for the depreciation in gas stock by the assertion that a large number of householders have returned to their lamps and oil. There has been no such general and simultaneous substitution of oil for gas as to cause a decline of over ten per cent in gas stock in as many days. The immediate reason of the decline is no doubt the threatened cutting down of the tariff of rates and the consequent decrease of dividends. From $3.75 to $2.50 per thousand feet is a tumble of exactly 33⅓ per cent and it means a stoppage of fat incomes for holders of gas stock. That's all there is of it. As for oil it will never take the place of gas to an extent that will make the manufacture of gas less profitable."

The Gas Troubles in Indianapolis, Ind.—INDIANAPOLIS, Ind., July 31st.—Quite a fight is going on between the City Council and the gas company over the lighting of the public lamps. There is a contract in existence for lighting thirty-two hundred hours at twenty-nine dollars per lamp, but this the Council refuses to pay, and also all other propositions made by the gas company at present. An order is out for the cutting off of the public lamps, the Council proposing to substitute oil.

The Gas Questions in Brooklyn, Astoria, and Long Island City.—Mayor Howell has sent to the Brooklyn Board of Aldermen a message, vetoing resolutions awarding contracts for lighting street lamps to the Excelsior and the New York and New Jersey Globe (Naphtha) Gas-Light Companies. He holds that the resolutions are partial, and discriminate unjustly. "I have," he says, "carefully calculated the amount which would be saved by the use of naphtha in the lamps proposed. It is so slight as hardly to warrant the change, even if the manner of making it were not open to objections. It would be doubtful policy, at best, to change the structure of 2000 lamps and try the experiment of lighting our streets with an article of an inferior and dangerous quality, for a period of six months, at a saving of less than $3500."

Mr. Joseph W. Beatley, Engineer and Superintendent of the People's Gas-Light Company, of Brooklyn, who are the owners of the property occupied by the old Gas Company of Long Island City, has visited the ground p eviously occupied by the gasometer, which was recently complained of as a nuisance, and arrangements were made to remove the water and to fill up the excavation There is no doubt but that there is a great deal of room for improvement in the lighting of this place.

There is a constant complaint about the miserable manner in which the street lamps in Astoria are being lighted by the gas company, which is again experimenting with the use of oil instead of coal. And the complaint is not without just reason. About one half of the lamps are not lighted at all and the others have no more illuminating power than a farthing rush-light. Such a state of affairs should not be tolerated by our city authorities, and the people hope that some steps will be taken at once to have the streets properly lighted.

Gas at Allegheny City, Pa.—The proposed ordinance granting to the "National Gas Company" the privilege of laying pipes in the streets, etc., submitted by councils, with instructions to report the amount of capital stock of the company, and also as to the fixing of a time when the company would commence operations, etc., were laid over. From inquiry it appeared that the company had not yet been organized, or any steps taken to that end.

Wichita, Kansas, is agitating the erection of gas works.

The Milwaukee Gas-Light Co., has reduced the price of its product from $3 to $2.50 per thousand feet.

Waterloo, Iowa.—This place is to be lighted with gas. The work of putting down the mains and pipes has recently been pushed energetically with a view to immediate completion.

Gas Works in Neenah, Wisconsin.—The City Council of this place has passed the gas ordinance, and Mr. J. D. Patton, of Hicksville, Ohio, will at once begin the erection of suitable buildings for the works and commence laying pipes. Ere winter sets in, Neenah will be illuminated with gas.

Curtailment of the Us of Gas at Cincinnati.—Cincinnati is resorting to a more primitive method of combating the extortion of her gas companies than a resort to the electric light agitation. The citizens are very generally going back to the use of lamps, and agreeing to declare they "like them better than gas." Full 20,000 lamps have

COAL TRANSPORTATION AND GENERAL MINING STOCKS.

COAL STOCKS.

Name and Location of Company.		Feet on Vein.	Capital Stock.	Shares. No.	Shares. Par Val.	Assessments. Total levi'd to date.	Assessments. Date and amount per share of last. Mo.	Yr.	Amt.	Dividends. Total paid to date.	Last Dividend. Mo.	Yr.	Amt.	Rate per Ann.	Highest and Lowest Prices Per Share in Currency at Which Sales Were Made. N. B.—Quotations of D., L. & W. R. R., and Pa. Coal Co. are per $100—two shares. Aug. 3. H.	Aug. 3. L.	Aug. 5. H.	Aug. 5. L.	Aug. 6. H.	Aug. 6. L.	Aug. 7. H.	Aug. 7. L.	Aug. 8. H.	Aug. 8. L.	Aug. 9. H.	Aug. 9. L.	Sales.
			$		$	$				$				Per c'nt												
Consol. Coal	Md.		10,250,000	102,500	$100	*					Jan.	1877	2½													
Del. & H. Canal	Pa.		20,000,000	200,000	100	*				38,821,104	Aug.	1876	4	9	53¾	51¼	52	50¼	52¼	51	52	51¼	51½	51	51⅝	50¾	6,825
Del., Lac. & W. R. R.	Pa.		26,200,000	524,000	50	*					July	1876	2½	5	57½	53⅝	54¼	51½	55½	52¾	55	53	54½	53⅜	54¼	52⅞	192,100
Lehigh C. & Nav.	Pa.		10,448,550	208,971	50	*					Nov.	1876	1½	5½	19½	19	19	18¾	18¾	18½	18⅞	18⅝	18½	18½	18	17	1,256
Lehigh Valley R. R.	Pa.		27,228,855	540,858	50	*					July	1878	1		39⅞	39¾	39¾	39¾	39⅝	39⅝	39⅝	39⅝	39¾	39½	38⅞	38¾	1,723
Maryland Coal	Md.		4,400,000	44,000	100	*					Jan.	1876	1¼	1¼													
N. J. Central R. R.	Pa.		20,600,000	206,000	100	*					Apr.	1876	2½	2½	36¾	35½	35½	34	37¾	35¼	37	36⅛	35¾	35½	35¾	34½	9,164
Pennsylvania Coal	Pa.		5,000,000	100,000	50	*					May	1878	3														
Pennsylvania R. R.	Pa.		68,870,200	1,337,404	50	*					May	1877	1½	8	32⅝	32½	32½	32¼	32⅝	32¼	32⅜	32⅝	32¼	31⅞	31⅝	31⅝	32,198
Phil. & Read. R. R.	Pa.		34,278,175	685,563	50	*				43,012,497	Jan.	1876	2½†	10	18½	18½	18	17¾	17¼	17½	17⅛	17½	17½	16¾	16⅜	16¼	34,525

GENERAL MINING STOCKS.

Dividend Paying Mines.

American	Col.		1,000,000	100,000	10	*				60,000	July	1878	$0 10	12													
Belcher, G. S.	Nev.	1,040	10,400,000	104,000	100	1,184,200	May	1878	1 00	15,397,200	Apr.	1876	1 00	12													
Cobtail, G.	Col.	2,500	1,136,630	227,326	5	*				56,831	Nov.	1877	25														
Cobtail Tunnel, G.	Col.		100,000	20,000	5	52,000	July	1873	0 30	40,000	Dec.	1877	50	20													
California, G. S.	Nev.	600	54,000,000	540,000	100					28,620,000	July	1878	1 00	24			10					11	10¾	13½	13	575
Calumet & Hecla, C.	Mch		2,000,000	80,000	25	1,000,000				12,650,000	Feb.	1878	5 00	20			180				180						82
Central, C.	Mch		500,000	20,000	25	100,000	June	1862	0 65	1,260,000	Feb.	1878	5 00														
Cholla Potosi, G. S.	Nev.	1,400	2,800,000	28,000	100	1,610,000	Jan.	1878	3 00	3,040,000	Feb.	1872	1 00														
Copper Falls, C.	Mch		1,000,000	20,000	50	535,000	May.	1876		100,000	Nov.	1871	1 00														
Cons. Virginia, G. S.	Nev.	710	54,000,000	540,000	100	474,600	June	1873	3 00	40,500,000	June	1878	1 00	12					9		9		9¼	8⅞	11¼	11	155
Confidence, G. S.	Nev.	130	2,496,000	24,960	100	256,320	Apr.	1878	0 50	78,000	May.	1865	8½	8½													
Cons. Her. & Roe	Col.	16,500	1,000,000	100,000	10	*				120,000																	
Crown Point, G. S.	Nev.	600	10,000,000	100,000	100	1,773,370	June	1878	1 00	11,588,000	Jan..	1875	2 00	24													
Eureka Cons., G. S. L.	Nev.		5,000,000	50,000	100	100,000	May	1876	1 00	2,350,000	May	1878	3 00	24													
Eureka G. Mg., G.	Cal.	1,680	2,000,000	20,000	100					2,142,000	Apr.	1878	0 25														
Franklin, C.	Mch		500,000	20,000	25	360,000	June	1876	5 00	585,000	Nov.	1871	1 00														
Gould & Curry, G. S.	Nev.	612	10,800,000	108,000	100	2,666,000	Apr..	1878	1 00	3,825,800	Oct.	1870	10 00														
Grand Prize	Nev.	1,500		100,000		100,000	July.	1878	1 00	400,000	Feb.	1878	1 00														
Hale & Norcross, G. S.	Nev.	400	11,200,000	112,000	100	2,802,000	May	1878	0 50	1,598,000	Apr.	1871	5 00	12													
Hukill, G. S.	Col.	3,288	1,000,000	100,000	10	*				190,000	Aug.	1878	0 10	12			4½								4.55		200
Kentuck, G. S.	Nev.	95	3,000,000	30,000	100	270,000	Dec..	1874	1 00	1,252,000	Mar.	1870	5 00														
Leopard, L. G. S.	Nev.	1,500	5,000,000	50,000	100	125,000	Apr..	1878	30	162,500	Dec.	1876	0 50														
Merrimac, S.	Mas.	1,500	500,000	100,000	5	*				120,000	Mar.	1878	0 10	12													
Minesota, C.	Mch.		1,000,000	20,000	50	436,000	June	1869	1 00	1,820,000	Mar.	1876	0 50														
Moose	Col.	39,000	2,000,000	200,000	10	*				200,000	Mar.	1878	0 25	10											3		100
National, C.	Mch.		500,000	20,000	25	195,000	Oct..	1875	1 00	360,000	Oct.	1873	1 00														
N. Y. & Colorado, G.	Col.		1,000,000	50,000	20	*				20,000	Mar.	1877	0 20						2.05	1.95	2.10	2.05	2.10	2.05	2	1.90	1,600
Northern Belle, S.	Nev.	1,600	5,000,000	50,000	100					1,425,000	Feb.	1878	1 00														
Ontario..	Uth.	3,000	10,000,000	100,000	100					1,450,000	July	1878	1 00	6	38¾		38¾		38¾	38⅜	38¾	38⅛	39¼		39¾	39	1,614
Ophir, G. S.	Nev.	675	10,080,000	100,800	100	3,236,000	June	1878	1 00	1,394,400	Mar.	1864	4 00														
Pewabic, C.	Mch.		500,000	20,000	25	185,000	June	1868	3 00	460,000	July	1873	1 00								1½						12
Phœnix, C.	Mch.		1,000,000	20,000	50	817,500	Sept.	1870	3 00	20,000	Jan.	1876	1 00														
Plumas	Cal.		1,000,000	100,000	10					50,000	Aug.	1878	10				4.10										100
Polar Star, G. S.	Col.	1,300	500,000	50,000	10	*				5,000	Jan.	1878	0 10														
Quincy, C.	Mch.		200,000	20,000	10					2,130,000	Feb.	1877	4 00						13		13						120
Raymond & Ely, G. S.	Nev.	5,000	3,000,000	30,000	100	570,000	Apr..	1878	1 00	3,075,000	Sept.	1873	3 00														
Ridge, C.	Mch.		500,000	20,000	25	200,000				90,000	Feb.	1875	1 00														
Rye Patch	Nev.	1,000		30,000		97,500	Nov.	1876	0 50	105,000	Dec.	1877	0 25														
St. Joseph, L.	Mo.	2,000 acs.	1,000,000	100,000	10					250,000																	
Savage, G. S.	Nev.	800	11,200,000	112,000	100	3,860,500		1878	1 00	4,460,000	June	1869	3 00														
Seaton, G. S.	Col.	1,700	500,000	50,000	10	*	June			10,000	May	1877	0 10	12													
Sierra Nevada, G. S.	Nev.	3,650	10,000,000	100,000	100	1,950,000	May	1878	0 50	102,000	Jan.	1871	1 00	10									1¼				100
Silver King										200,000	Feb.	1878	0 50														
Standard	Cal.			50,000		50,000	July	1878	1 00	450,000	May	1878	1 00														
Yellow Jacket, G. S.	Nev.	1,200	12,000,000	120000	100	3,678,000	Apr..	1878	2 00	2,184,000	Aug.	1871	2 50														

Non-Dividend Mines.

Allouez, C.	Mch.		1,000,000	20,000	50	940,000	May	1876	5 00																		
Alpha, G. S.	Nev.	300	3,000,000	3,000	100	240,000	Mar.	1878	1 00																		
Am. Flag, G.	Col.	5,300	600,000	60,000	10	*													17c		17c				16c	15c	13c	10c	9,500
Bertha & Edith, G.	Vir.	645 acs.	3,500,000	350,000	10	*											5c		5c		5c	1c	7c	1c	6c		6c	5c	29,200
Best & Belcher, G. S.	Nev.	545	10,080,000	100,800	100	438,590	Apr.	1878	1 00																		
Buckeye	Col.		2,000,000	400,000	5	*											32c		33c	30c	31c		33c		29c		32c	30c	7,200
Bullion, G. S.	Nev.	943⅛	10,000,000	100,000	100	2,802,000	Jan..	1878	1 00																		
Caledonia, G. S.	Nev.	2,188	10,000,000	100,000	100	1,440,000	May.	1878	0 50																		
Cashier	Col.		500,000	250,000	2	*																					
Cleveland, G.	Col.	3,715	250,000	25,000	10	*																					
Cons. Imperial, G. S.	Nev.	468	50,000,000	500,000	100	675,000	Apr.	1878	0 20																		
Con. N. Slope & E. C. T.	Col.	15,000	500,000	10,000	50	*																					
Dahlonega	Ga.		250,000	250,000	1	*											15c		15c	14c	14c	13c	14c		13c				7,100
Dana, C.	Mch.		500,000	20,000	25	68,000	Jan..	1863	0 50																		
Dawson, S.	Ont.		1,200,000	60,000	20																						
Duncan, S.	Ont.		1,200,000	60,000	20	75,000	July	1876	41¾								43¾		43¾								
Exchequer, G. S.	Nev.	400	10,000,000	100,000	100	380,000	Jan..	1878	1 00																		300
Gold Placer, G.	Col.		5,000,000	200,000	25												28c		28c	27c	26c		28c		25c				3,500
Granville, G.	N. C.	357 acs.	1,000,000	100,000	10	*			0 50																		
Humboldt, C.	Mch.		500,000	20,000	25	100,000	Sept	1876	0 15																		
International, S.	Ont.		1,200,000	60,000	20														62½	56¼									400
Julia, G. S.	ev.	3,000	11,000,000	110,000	100	525,000	Jan..	1878	0 75										8½										50
Justice, G. S.	Nev.	2,100	10,500,000	105,000	100	2,500,500	June	1878	1 00																		
King's Mountain, G.	N. C.		1,200,000	120,000	10	*																					
Lacrosse	Col.	3,000	1,000,000	100,000	10	*											27c	26c	26c		28c	25c	27c	26c	28c	25c	30c	27c	26,400
Luzerne	Col.	4,200	5,000,000	500,000	10	*																					
Madison, C.	Mch.		500,000	20,000	25	123,000	Sept	1876	0 10																		
Mariposa preferred	Cal.	44,387	5,000,000	50,000	100	1,425,000	June	1877	1 00																		
" common	Cal.	acres.	10,000,000	100,000	100	1,425,000	June	1877	1 00																		
Memphis	Col.	6,000	300,000	60,000	5	*																					
Mesnard, C.	Mch.		500,000	20,000	25	160,000	Apr.	1876	0 50																		
Mexican, G. S.	Nev.	600	10,080,000	100,800	100	217,400	May.	1878	0 50																		
Mt. Bross Tunnel	Col.	8,600	2,000,000	200,000	10	*																					
Overman, G. S.	Nev.	1,200	3,840,000	38,400	100	3,173,880	Apr..	1878	3 00																		
Osceola, C.	Mch.		1,000,000	40,000	25	2,567,880	Nov.	1877	3 00																		
Petherick, C.	Mch.		500,000	20,000	100	165,533	Mar.	1876	0 50																		
Pleasant View, G.	Col.	1,200	200,000	20,000	10	*																					
Quicksilver preferred	Cal.	8,500	4,291,300			*																					
" common	Cal.	acres.	5,708,700	100,000	100												13½										
Rockland, C.	Mch.		500,000	20,000	25	495,000	Jan..	1874	1 00																		10
Seg. Belcher, G. S.	Nev.	160	640,000	6,400	100	244,800	Apr.	1876	5 00																		
Silver City, G. S.	Nev.	3,900	6,310,000	63,100	100	15,775	Nov.	1876	0 25																		
Silver Hill, G. S.	Nev.	5,400	10,800,000	108,000	100	1,188,000	Apr..	1878	1 00																		
Star, C.	Mch.		500,000	20,000	25	265,000	Mar.	1876	0 50																		
Superior, C.	Mch.		500,000	20,000	25	340,000	Mar.	1874	0 25																		
Union Cons. G. S.	Nev.	850	10,000,000	100,000	100	310,000	Apr..	1878	0 25																		

G. Gold. S. Silver. L. Lead. C. Copper. * Non-Assessable. † A dividend of 3½ per cent. was declared on the preferred stock of this Co. in July, 1876.

Total Assessment levied to date..... 51,072,348
Total Mining Dividends to date..... 228,227,332

Total Sales of Coal Stocks for the week..... 277,701 shares.
Total Sales of Mining Shares for the week..... 85,193 "

been sold in the city within the last three months, and 4000 gas meters have been taken out.

Wilmington Coal Gas Co.—This company has declared dividend of $3 per share, payable on demand.

AUCTION SALES.—*Boston Gas Co.*—3 shares at $790@$792½ per share.

Dorchester (Mass.) Gas Co.—39 shares at $96⅜@¾ per share, ex div.

Cambridge (Mass.) Gas Co.—7 shares at $135¼ per share, ex div.

Jamaica Plains Gas Co.—4 shares at $120 per share, ex div.

New York Gas-Light Co.—25 shares at $95 per share.

The following list of Companies in New York and vicinity is corrected weekly by GEORGE H. PRENTISS, Broker and Dealer in Gas Stocks, No. 30 Broad street, New York:

COMPANIES IN NEW YORK AND VICINITY.	Capital Stock.	Par.	DIVIDENDS. Rate per ann.	DIVIDENDS. Am. of last.	DIVIDENDS. Date of last.	QUOTATIONS. Bid.	QUOTATIONS. As'd.
	$		P. ct.				
Mutual, N. Y.	5,000,000	$100	6	1½	July, '78	72	*76
" Bonds	90,000	1,000	6	3½	Aug., '78	.....	102
N. York "	4,000,000	.....	8	4	May, '78	90	95
Metrop. "	2,500,000	100	10	5	Aug., '78	129	135
" Certfs.	1,000,000	.....	7	3½	" '78	100	103
Harlem "	1,850,000	50	6	3	Feb., '78	75	82
Manhat. "	4,000,000	50	.....‡	5	May '78	180	190
Brooklyn, Bkin.	2,000,000	50	15	5	Apr., '78	145	157
Nassau	1,000,000	25	.....‡	3	July, '78	73	77
" Certfs.	700,000	1,000	7	3½	May, '78	90	97
People's.....	1,000,000	10	....‡	3½	Jan., '76	20	30
" Certfs.	300,000	1,000	7	3½	July, '78	75	85
" Bonds.	325,000	.....	7	3½	May, '78	90	96
Metrop. "	1,000,000	100	5	2½	May, '78	60	67
W'msb'g "	1,000,000	50	8	1½	July, '78	75	80
" Certfs.	1,000,000	.....	7	3½	July, '78	95	100
Citizens'.....	1,200,000	20	...‡	3	July, '78	73	80
" Certfs.	320,000	1,000	7	3½	Apr '78	97	100
J. C., N. J.	750,000	20	10	7½	July, '78	150	160
Municipal, N. Y.	466,000	50	.....	.....	.....	95	100
" Bonds..	750,000	.....	.....	.....	.....	.....	...
.....	.....	.....	.....	.....	.....	.....	...

* Ex Dividend.

Copper Stocks.

Reported by WILSON W. FAY & Co., Brokers in Mining and Miscellaneous Stocks, Room 7, Traveller Building, 31 State street.

BOSTON, Wednesday Evening, Aug. 7, 1878.

There has not been much change in the state of the market from last week, with the exception that a few of the stocks are a little firmer, and that there has been a few more transactions, which have been confined principally to Duncan, Calumet & Hecla and Quincy.

Calumet & Hecla has sold back to 180, and closes firm at 179½@180.

Central is in demand at 25, and no stock offering.

Copper Falls looks very firm at 1½@1¾, and sales at 1¾, assessments paid, and will probably go higher.

Franklin looks weak at 5¾@6¼, and no sales.

Osceola is quiet at 8½@9½, and no transactions.

Pewabic sold down to 1½, a small lot of 12 shares, and closes 1⅛ bid and 2 asked.

Quincy has fallen off to 13, and looks rather soft, but it is one of those stocks that are controlled by a few parties who can put it about where they please.

Ridge closes weak at 1⅛@1⅜.

Duncan also looks weak, having sold down to 4½, and closing 4½@4⅝. There has been no favorable reports from the mine lately, and the stock is rather soft in consequence.

International holds firm at 9-16@11-16, and sales at ⅝ and 9-16.

Gold and Silver Stocks.

NEW YORK, Friday Evening, Aug. 9, 1878.

Were it not to put on record for future reference the course of business at the Mining Exchange, the operations of the past week would not be worthy of the space devoted to them. The business has been very small, amounting to but 82,795 shares, and nearly all of this has been in the cheaper stocks. The business doing is almost entirely among brokers who, instead of doing a business in stocks of merit, are gambling with cheap certificates. The dealings in California were at $10@$11, until the announcement of a dividend was made public to-day, when the price advanced to $13@$13.50. The total sales for the week were 575 shares. Consolidated Virginia ranged between 9¼@8⅛ until to-day, when there was an advance to 11@11½, with sales amounting to 155 shares. In American there have been no dealings. This company has not yet declared its regular dividend. There are those who think that the officers may still be unwise enough to do so. Hukill records sales of 200 shares at $4.50@$4.55, and Moose, 100 at $3. New York and Colorado has been fairly active, the sales amounting to 1600 shares at $2.10@$1.90. The dealings in Ontario have been larger than usual, the total number of shares sold being 1614 at $38.50@$39.25. This company has declared its regular monthly dividend (No. 31), and an extra one (No. 32) for July, aggregating $100,000, or $1 per share, payable August 15th. There have been but 100 shares of Plumas sold, bringing $4.10; 100 shares of Seaton sold at $1.25. The dealings in the low-priced stocks have been as follows: American Flag, 5900 shares, at 17@10c.; Bertha and Edith, 29,200 shares, at 7@1c.; Buckeye, 7200 shares, at 33@29c.; Dahlonega, 7100 shares, at 15@13c.; Gold Placer, 3500 shares, at 28@25c., and Lacrosse, 26,400 shares, at 25@30c. American Flag dropped, on information confirming previous reports, to the effect that the claim of the company had been "pumped," and that the pumper had a good title. Bertha and Edith sold down to 1c. per share upon the following announcements being made to the Stock Exchange:

NEW YORK, June 19th, 1878.

President of the New York Stock Exchange:

SIR: The Bertha and Edith Gold Mining Co. has this day executed a mortgage of ten thousand dollars upon its property in Virginia. Bonds will be issued for that amount, which will be adequate to pay all existing debts; to acquire the fee of the property, upon which only mineral and mining rights are now held, and to constitute a fund for future operations. Respectfully, etc.,

J. M. SMITH, Sec'y.

NEW YORK, Aug. 6, 1878.

G. B. Satterlee, Esq., Prest. N. Y. Mining Stock Exchange:

SIR: The trustees of the Bertha and Edith Gold Mining Co. hereby notify you that they have passed the necessary resolutions to increase the number of shares from 350,000 to 500,000, also to reduce the par value of shares from ten dollars per share to one dollar per share, and that the meeting of stockholders to authorize such change will be duly called. It is also proposed to make the entire issue of $10,000 bonds convertible into stock.

Respectfully, J. M. SMITH, Sec'y.

We notice that the Gatling Gold and Silver Mining Company, of Marmora, County of Hastings, Ontario, is about to seek additional working capital in England. This property is indorsed by numerous good authorities in this country, and promises to become a very profitable investment. There is a large amount of ore in sight, and considerable on dump. The company ran out of funds while erecting the necessary works for reducing its ores. It is estimated that with a 20-stamp mill, which is nearly completed, and the necessary roasting appliances, the company can earn over $100,000 per annum.

SAN FRANCISCO MINING STOCK QUOTATIONS.
Daily Range of Prices for the Week.

NAME OF COMPANY	CLOSING QUOTATIONS Aug. 2.	Aug. 3.	Aug. 5.	Aug. 6.	Aug. 7.	Aug. 8.	Opening Aug. 9.
Alpha.....	11⅛	11	11	11⅞	16¼	13⅞	14
Belcher....	4⅛	4¾	6⅝	6⅛	9⅞	8⅝	9
Best & Bel.	15⅛	15¼	15⅛	15¾	17	17¾	20⅛
Bullion.....	5¼	5½	5⅞	6⅞	8⅜	7⅝	.....
Caledonia..	2½	.....	2½	3	3	3¼	.....
California..	9⅝	9⅝	9¾	9⅞	10⅜	12¼	12½
Chollar-Pot	29¾	29¾	31	33	35½	34	34
Con. Imp...	.....	.....	.....	.....	.....	.....	.....
Con. Va.....	8½	8⅝	8¼	8⅜	8⅜	10⅝	10¼
Confidence.	.....	.....	5	5	7	5	.....
Crown P'int	7½	8	8	7⅝	8	9½	9½
Eureka Con	47¼	48	46½	44	45	45	45
Exchequer.	4⅛	3⅞	4	4⅛	5⅜	5	.....
Gould &Cur	7⅜	7⅜	7½	8¼	8⅝	9	12½
Grand Prize	3⅞	3½	3½	3½	3½	3½	.....
Hale & Nor.	7⅜	.....	7½	7¾	9⅛	8¾	11⅜
Julia.....	.....	8⅝	10¼	11⅞	12½	.....	.....
Justice.....	5½	5½	6	6⅝	7⅜	6⅝	7½
Kentuck	4¾	4¾	4	4½	4¾	5⅜	.....
Mexican....	13½	13⅞	14¾	16½	17⅞	24½	26
North. Belle	10¼	10¼	10	10	9¼	9⅛	.....
Ophir	38½	38¾	41	43¾	43	46	45
Overman...	12	11¾	12½	12⅝	16¼	17	18
Ray. & Ely.	3	3½	3	3	3	3	3
Silver Hill..	1	1	1¼	1¼	2	2	.....
Savage.....	10½	10⅝	10⅞	10⅝	12	12⅞	13½
Seg.Belcher	.....	22	.....	.....	25	26½	.....
Sierra Nev.	12½	15¼	16⅞	29¼	34¼	27	25
Union Con.	10⅛	11⅝	12¼	19¾	21¼	24⅛	29
Yel. Jacket.	10¾	10⅝	10¼	10¾	11⅞	15¼	15½

We would judge from the opening prices in the above list, and the course of the market during the week, that the hopes and anticipations which have so long existed in the breasts of the Frisco stock operators, are in a fair way of realization. Some of the stocks have more than doubled in price—notably Union Consolidated (which we intimated in our last might be in bonanza), opening to-day at $29, against $9¾ a week ago. The stock of the Sierra Nevada Company has advanced to $25, against $12⅝ a week ago. It is generally believed that this mine is in bonanza, yet the reports in the papers do not confirm the opinion, the body of quartz struck on the 2000 level assaying in places very well, but, taken as a whole, would not pay extracting and milling expenses. Mexican has advanced to $26, against $13½ last week. Belcher also keeps pace with the general improvements, Hale and Norcross, in sympathy with the upward movement, has advanced to $11½, though the statement is published that the July expenses of this mine were greater than during any other month for two years past, without any decisive progress to show for this same.

Ophir is unchanged. The results of the investigations recently made by the experts and the general public admitted to this mine have rather an unfavorable effect upon the stock, some of the quotations during the week declining to $38½, and the price to-day being lower than reported last week. The former bonanzas are shipping, together, about 500 tons of ore per day. The California Co. has declared another dollar dividend, payable on the 15th inst. A dispatch from Mr. Sutro to the *Gold Hill News*, under date of August 1st, states that the tunnel had made the extraordinary progress of 102 feet since July 22d, the total length from its mouth amounting to 20,210 feet. A quartz-ledge, 80 feet in width, has lately been traversed, with assays averaging $15 per ton. It is thought that it can be extracted and milled at a profit through the tunnel. The decline in the stock of the Eureka Consolidated Co., in face of the splendid appearance of the mine, is very suggestive of some power behind the throne trying to cheat the public.

The Eureka *Leader* says that confident predictions are made that ore will be found on the twelfth level of the Consolidated before the drift is run 100 feet. If such proves to be the case, and all indications point that way, Eureka will be the grandest property on the coast.

A commendable example of rapid profits in mining is illustrated by the recent amount current of the Hidden Treasure Gold Mining Co., of Dakota. On July 16th, this company paid a dividend of 6¼ per cent on a capital stock of $250,000. The report, as published in the *Pioneer*, says:

"The mine is looking better than at any time since it was opened, and the amount of ore now in sight can safely be estimated as worth one million dollars, and in working this out a body ten times as large will undoubtedly be developed. The 30-stamp mill clatters away incessantly, each twenty days cleaning up a bar valued at from sixteen to twenty thousand dollars. The capital stock is divided into ten shares, of which Tim Dyer, Esq., owns two, the other partners one each. The dividend, $16,250, nets each shareholder the snug sum of $1625 per month. All this from a mine that originally cost the company $12,000."

The San Francisco *Commercial Herald* says of the market:

"The spirit of the market is better than we could almost look for under all the circumstances, for had we any encouragement of a somewhat certain nature to give with regard to favorable developments, the plethoric condition of our money market would bring about a very animated state of affairs in mining stock circles. The sudden advances and recessions will not, in the long run, greatly benefit those who make these manipulations, and they certainly gain very little credit for the manner in which the work is done. It gives no confidence, and the result is a demoralized market. At the close a better feeling prevails, and prices are a little better. The north-end mines are the favorites."

North Bloomfield (Cal.) Gravel Mining Co.—The last clean-up from this mine is said to be the largest ever made by the company. As some of the clean-ups have been as high as $60,000, the last one must have gone into higher figures.

Cassiar Placer and Caribou Quartz Diggings, British Columbia.—The aggregate yield of the two above districts is estimated at $1,500,000 a year, each yielding about one half.

Rising Sun Silver Mining Co: 2000 shares of this company's stock, par $10, sold at auction during the week at 10c. per share.

Assessments, with dates when delinquent:

Tiger, 30c.; Sierra Nevada, $1; Eagle, 15c., August 16th; Mariposa, $1, August 12th; El Dorado South Con., 25c., August 30th; McElroy, 10c., August 28th; South Standard, 25c., August 27th.

GRANVILLE GOLD COMPANY.

Incorporated November 10th, 1876.

Capital, $1,000,000. 100,000 Shares, par value $10.

For the purpose of erecting additional machinery, a limited number of shares are now offered for sale. Send for prospectus to the Company's Office, 23 Dey street, New York, Room 1, where subscription books are now open.

EDWIN H. MULFORD, Sec.

OFFICE OF HUKILL GOLD AND SILVER MINING CO.

NEW YORK, August 1, 1878.

The regular monthly dividend (the 17th) of one per cent will be paid at the office of the company, as above, on and after the 10th inst. Transfer books will close on Saturday, the 3d, and re-open on Tuesday, 13th inst.

S. V. WHITE, Treasurer.

OFFICE OF THE PLUMAS NATIONAL QUARTZ MINING CO.

77 CEDAR STREET,
NEW YORK, August 1, 1878.

The dividend for the month of July, of eight cents per share upon the capital stock of the Plumas National Quartz Mining Co., has this day been declared, payable in gold coin, on and after the 15th inst., at the office of the Transfer Secretary, No. 77 Cedar street, Room 15. Tranfer books will close on the 8th, and re-open on the 17th inst.

By order of the Board.

A. P. MARSHALL,
Transfer Secretary.

OFFICE OF THE ONTARIO SILVER MINING COMPANY,

31 BROAD STREET, NEW YORK, August 8, 1878.

DIVIDEND No. 31.

The regular monthly dividend of fifty cents per share has been declared for July, payable at the office of the Transfer Agents, Wells, Fargo & Co., on the 15th inst. Also, an

EXTRA DIVIDEND (No. 32)

of the same amount has been declared, payable at the same time and place. Transfer books close on the 10th inst. H. B. PARSONS, Assistant Secretary.

WATER BONDS.

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17,000 8 per cent, 11 to 15 Years.

Payable in New York. Interest Semi-Annually.

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The only line for Central Idaho Springs, Georgetown, Boulder, Longmount, Golden and the famous resorts and Parks of Colorado. Trains leave depot, foot of Sixteenth Street, Denver, at 7:00 A. M. and at 6:10 and 8:15 P. M.

O. H. HENRY, Supt., Golden. W. N. BABCOCK, Gen. Freight & Pass. Agent, Golden.

Denver & Rio Grande Railway,

For Colorado Springs, Manitou, Pueblo and Canon City. Connecting at Colorado Springs with stages for Pueblo and vicinity; at Pueblo with the Atchison, Topeka and Santa Fe Railway, for all points East. This forms the new and picturesque Through Line from Denver to the Missouri River; at El Moro—southern terminus—with stages for Cimarron, Las Vegas, Santa Fe, etc.; at La Veta for Saguache, Del Norte and the famous Gold and Silver Mines in San Juan District.

For further information apply to Ticket Agent, City Office, 249 16th Street, Denver.

D. C. DODGE, Gen. Freight and Passenger Agent.
W. W. BORST, Acting Superintendent.

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Colorado has a new line of railroad extending from Pueblo down the Arkansas Valley, through Southern Kansas City and Atchison, on the Missouri River, where connection is made with all the great trunk lines for all points in the United States and Canada, avoiding tedious delays and vexatious transfers.

This is the best built and best equipped road in the West. Our new line of Pullman Sleepers are the most luxuriant in the country. The only line equipped with air brakes and safety platforms. Try it. For detailed information, maps, time tables, "Iron Trail," and San Juan Guide, address

T. J. ANDERSON, Gen. Ag't, Pueblo, Col.
L. H. NUTTING, Gen. East'n Ag't, 239 Broadway, N. Y.
W. F. WHITE. Gen. Pass. and Ticket Ag't. Topeka, Kan.

$500.00 REWARD.

The public are informed that on the 16th day of last month a gentleman, accompanied by a lady, entered the ticket office of the MISSOURI, KANSAS and TEXAS RAILWAY at HANNIBAL, MO., and purchased of the Ticket Agent two first-class tickets, reading from Hannibal, Mo., to DALLAS, TEX. They also inquired if there was a sleeping car running direct through. The Ticket Agent informed them that there was, and that it would leave in a few moments. They then asked if the Sleeping Car passed through DENISON and SHERMAN, TEX. The Ticket Agent answered that it did, and was just about to hand the party a map and time table of the famous INDIAN TERRITORY ROUTE TO TEXAS, when the lady broke out, "See here, Mister Ticket Agent, I have heard and I have read a great deal about this MISSOURI, KANSAS, AND TEXAS RAILWAY and the B. I. T., and I want you to tell me the truth before we take that train. Is it true that there is only one railroad in the United States that passes through the B. I. T., and is it true that the name of that road is the M., K. and T., and is it true that everybody takes it, and that it ENTERS TEXAS AT DENISON?" "Madam," says the Ticket Agent, "I am proud to say it is all true, the M., K., and T. R'y is the only line that ENTERS TEXAS AT DENISON, and the only line running SLEEPING CARS to SHERMAN and DALLAS, TEX., and"—just then the bell rang; the parties made haste to the train, which was in a moment whirling on its way to TEXAS and the far-famed Indian Territory, while the HANNIBAL Ticket Agent walked the floor of the M., K., and T. TICKET OFFICE racking his brain, trying to make out what "she" meant by "B. I. T." He never stopped to think that every day in the week he was asked from 200 to 300 times, "Give me a ticket to DALLAS, or FORT WORTH, or DENISON, or SHERMAN, or HOUSTON, through the BEAUTIFUL INDIAN TERRITORY," which last three words the lady abbreviated. Reader, if you are going to TEXAS, try the route through the Beautiful Indian Territory. It is the PANORAMIC ROUTE TO TEXAS.

JAS. D. BROWN,
Gen'l Passenger Agent,

INDIAN TERITORY ROUTE TO TEXAS.

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It traverses the most interesting portions of the North American Continent, and unites by unbroken tracks all the principal cities on the Atlantic Coast, on the Great Lakes and in the Mississippi Valley.

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